Lectures
ON
THE SURGICAL TREATMENT OF ANEURISM
IN ITS VARIOUS FORMS.

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LECTURE III.—PART II.

IN Professor Lister's well-known tract "On Ligature of Arteries on the Antiseptic System," he produces evidence which in his belief justifies the following opinion:—"It appears, then, that by applying a ligature of animal tissue antiseptically upon an artery, whether tightly or gently, we virtually surround it with a ring of living tissue, and strengthen the vessel where we obstruct it. The surgeon, therefore, may now tie an arterial trunk in its continuity close to a large branch, secure alike against secondary hæmorrhage and deep-seated suppuration, provided always that he has so studied the principles of the antiseptic system, and so carefully considered the details of the mode of dressing best adapted to the particular case in hand, that he can feel certain of avoiding putrefaction in the wound. For my own part, I should now without hesitation undertake ligature of the innominate, believing that it would prove a very safe procedure."

Now, I have purposely avoided speaking about the principles of the "antiseptic system" as laid down by Professor Lister,—not that I do not recognise the great interest of the question, but because I have neither the time nor the materials required for its adequate discussion. But I will not refrain from saying, that whether Mr. Lister's explanation of his method of dressing wounds be or be not the correct one, that method is very frequently (I will not say uniformly) successful in producing rapid union, especially in the deep parts of the wound; and if this be granted, which I think no surgeon will deny who will trouble himself to obtain practical experience of wounds so treated; and if it be also granted (which cannot be denied, for it is a matter of demonstration) that the catgut ligature, under favourable circumstances, will gradually melt away in the tissues without setting up ulceration,—how can it be denied that an artery tied with this substance, and so treated as that the deep parts of the wound may rapidly consolidate, has a chance of that union by first intention which John Hunter and his followers sought after. Such rapid union is impossible in the ordinary method, where a silk thread is keeping up irritation and ulceration in and around the tied artery, and propagating inflammation from the bottom to the surface of the wound.

In my own case of double distal ligature, the wounds were not treated in any special manner. I did, indeed, dress them immediately after operation in the manner recommended by Mr. Lister; but as the man's restlessness during the ensuing night disarranged all the dressings, and the air had been freely admitted to the wounds for many hours before I saw him next day, I discontinued these dressings, and applied merely wet rags. The exact condition of the tied arteries is shown in the preparation and in the drawings before you. You will notice that the carotid artery was obstructed only by a small quantity of clot, which has fallen out of the vessel in making the section. That the obstruction, however, was really complete during life was proved by the fact that only the faintest pulse was at any time perceptible in the temporal artery, and none at all for a calendar month after the operation: so that there could have been no premature softening of the ligature and reopening of the channel of the artery, such as occurred in Sir P. Crampton's case, and in a case where Mr Spence tied the carotid; and there can be no doubt, I think, that, had the man lived a little longer, a permanent diaphragm would have replaced the clot in the carotid, and its condition would then have resembled that of the subclavian. The latter vessel is closed entirely by an obstructing material, or diaphragm, which is accurately represented in this drawing, and which to the naked eye resembles a fibrous material, but which I have not had examined with the microscope, in order not to interfere with the exact condition of the artery. The diaphragm seems not to be more than about a quarter of an inch in thickness.

This case then affords definite anatomical proof of that which we might have inferred from the experience above referred to of Mr. Lister, Mr. Bickersteth, Mr. Heath, and myself—namely, that it is possible to tie a large artery in the human subject in such a manner that the wound may unite by first intention, and the patient never be in any danger of secondary hæmorrhage. And my case shows further, what no experience unconfirmed by dissection could show, that the catgut ligature may be removed by absorption, the vessel remaining undivided.

Now in this latter particular our experience differs from that of Porta. He, as is well known, instituted most laborious experiments on the action of the catgut ligature in the lower animals, besides practising the operation on the human subject to which I have referred; and he came to the conclusion that in all cases a ligature, of whatever kind, tied tightly round an artery, produces a softening of its cellular (or external) coat, and the division of the vessel by a process which he distinguishes from one of ulceration, though the nature of the distinction is not made clear. The exact nature of the process, however, is immaterial to our present purpose. The only point of importance is that in Porta's operation the arteries were always divided, and when divided secondary hæmorrhage is of course probable. In my operation they are seen to be undivided, and this is, I believe, the rule when arteries are tied in this manner. Now if the external coat remain undivided secondary hæmorrhage is only possible in case of such small apertures as the carotid exhibited in my patient, and these can only give rise to hæmorrhage when the tissues in the neighbourhood are suppurating. If the latter remain firmly consolidated the only result will be (as that preparation shows) the extravasation of a minute drop of blood.

The differences which exist between such operations as I have described with the carbolised catgut and those which are related in Porta's great work are obviously two—the different preparation of the catgut, and the more rapid union of the deep parts of the wound. With respect to the first particular, no material can be imagined better adapted for a ligature than catgut long steeped in carbolised oil; it is perfectly tough, perfectly flexible, and perfectly smooth. It excites no irritation, absorbs no putrescent fluid, and though it gradually melts away, yet holds the artery firmly enough to close its tube permanently. Having used it in all large operations for about two years I can testify to the latter fact, and I can say that I have never seen any sign of irritation produced by it, nor witnessed the escape of any of the little knots from the wound, and that I hold it to be a very much better and more convenient hæmostatic than torsion, and infinitely superior to acupressure. In fact, I have found it to possess all the comfort of the silk ligature without its disadvantages.

If catgut is imperfectly prepared, it has not all these good qualities. If it be softened too much (as may easily be done when it is steeped in water), it will relax, and not hold the vessel permanently closed. If it be too little softened (as may easily be done when moistened in the mouth), it is very probably too harsh and irritating, and may be absorbent.

But I do not imagine that catgut, or any other ligature, can be applied to an artery with perfect success, by which I mean so as to close its tube yet not interrupt its continuity, unless the artery itself is kept as much as possible free from inflammation—that is, unless the tissues around become rapidly coagulated by first intention. An artery exposed in the middle of a suppurating cavity will, I believe, always soften and give way; and it was in all likelihood because they failed to secure this prompt union of the deep parts of the wound that Porta in most of his experiments and operations, and Sir A. Cooper in the operation which he performed after his first successful one, failed to obtain this perfect result. At any rate, the fact that such results are possible must have its bearing on the question whether Brasdor's operation in its integrity is or is not applicable in aneurism of the innominate artery. For I think we have in the facts I have produced ample evidence that if

the carotid and first part of the subclavian are obliterated, the coagulation of the entire tumour is the natural result; while the ligature of the carotid and third part of the subclavian, though it may possibly produce a cure, cannot be certainly trusted to do so.

In those aneurisms, then, of the innominate artery which appear to be advancing after distal ligature of the carotid, the surgeon is justified, I think, in proposing to tie the subclavian in the first part of its course.

The diagnosis between innominate and aortic aneurisms is never easy, and in some cases it is impossible. It is also impossible to say whether, in an aneurism judged to be innominate, the aorta will be found implicated or not, or to say whether the aneurism is of the lateral or the peripheral form. I cannot stop to discuss these questions, especially as I do not know that I could add anything to the rules of diagnosis which are laid down by other inquirers. Nor do I know that it is very necessary; for I believe that the indications for operation are rather to be drawn from the progress of the case than from the opinions (necessarily uncertain) which we may form on the above heads. If an aneurism which affects the innominate artery is definitely extending towards the trachea and up the course of the carotid, its growth in that direction will almost certainly be checked by the ligature of the carotid. And all the more sure should we feel of this result if we could feel confident that the aorta was unaffected, and the aneurism of the sacculated or lateral variety. The definiteness of the bruit at a certain point and its becoming weaker as the stethoscope is removed from that point, the absence of any bruit near the valves, the difference of pulse on the two sides, and the absence of the general symptoms of aortic enlargement or tumour near the arch, are the main features of such a favourable case.

With respect to the ligature of the left carotid for aneurism of the arch of the aorta, I have no doubt that there are cases in which it is very beneficial, though there are no theoretical grounds for believing that a cure can be effected by this operation. The cases of Rigen and Tillanus, which are those most generally cited, are by no means sufficiently definite to afford any proof of the kind. Pirogoff's successful case is incomplete. Morrison's, though greatly benefited for a time, ultimately proved fatal; and Mr. Heath's, though here also the temporary benefit was most striking, is yet under observation. Nevertheless, in all these cases the relief from the operation was so marked as completely to justify the course pursued; and in a case such as that of Mr. S. Lane, where the aneurism appears to be wholly or almost wholly carotid, there is no doubt that the operation is urgently indicated.

I conclude from the analogy of the other cases of distal impaction which I have produced, that the benefit in these instances depends upon diminution of the size of the tumour consequent upon the obliteration of that part of the sac which was previously distended by the current of blood passing into the left carotid. The operation, therefore, holds out definite prospects of benefit in all cases in which the growth of the tumour can be traced upwards, towards the trachea on the left side, and, by parity of reasoning, the distal operation on the right side is equally indicated when the growth is on the opposite side of the windpipe; and it is in this way that I explain the benefit which followed the ligature of the right carotid and third part of the subclavian for aortic aneurism in Heath's case of simultaneous double distal ligature. In many other cases of thoracic aneurism growing upwards, the relief of spasmodic dyspnœa and the subsidence of the tumour, immediately after ligature of the carotid, appear to be explicable only in this way.

Another method of treatment which has been much employed of late years in aortic and mixed aortic aneurisms is galvano-puncture. In the case which I have already mentioned as having been treated by me with the double distal ligature, and which was mixed aortic and innominate, this treatment was employed with fatal results, but at the same time, as the preparation and drawing of the case show, with the effect of producing a very large amount of coagulum in the sac.

In fact, it may easily be shown, by direct experiment, that the constant current passed through any albuminous fluid, such as blood or white of egg, will generate an amount of coagulum in it which varies according as the positive or negative pole is used, and of course also according to the strength and duration of the current, the positive pole producing rapidly a firm albumino-fibrinous coagulum, and the negative a large frothy mass formed of minute coagula mixed into a foam by the gas which is generated in the decomposition of the blood, and around which coagulation may extend. The following experiment may be quoted from a tract by Dr. J. Duncan and Dr. Fraser, on "Electrolysis in Aneurism":—

"The left femoral artery of a large retriever mastiff was exposed and divided, and into each portion a nozzle, connected with the india-rubber tubing of the glass aneurism, was inserted. The entrance of blood was easily controlled by attached clips, and a temperature a little above 85° Fahr. was maintained by placing the globe in a hollow water-bath. On opening the clips, the blood flowed freely into the aneurism, and, as soon as the contained air had been expelled, the galvanic circle was closed by means of a key. Gas-bells in a short time rose to the upper part of the aneurism, and surrounded the electrodes which were there situated, and through the glass wall we could readily observe frothy masses slowly growing and accumulating round each pole, from which now and then a very small cluster of bells detached itself and was carried off—first in those irregular transits which marked the course of the blood-stream in our aneurism, and then suddenly down the exit tube to enter the distal portion of the divided blood-vessel. We had already found that in this apparatus the blood might be expected to coagulate spontaneously, in a very few minutes. After eight minutes, pulsation was yet perceptible in the exit tube, when the galvanic circuit was opened, and the entrance of blood stopped by closing the india-rubber tubing. The electrodes were withdrawn, and on unscrewing the hemispheres a little fluid blood was found, and a large coagulum, possessing nearly the exact configuration of the interior of the glass aneurism. At the surface two round holes were seen, which had been occupied by the electrodes. Immediately surrounding the orifice of the positive pole was a black ring, and beyond this a firm clot with entangled gas bubbles. The position of the negative electrode was surrounded by a quantity of froth intermingled with clotted blood. Both were perfectly distinguishable from the normally coagulated blood, and both possessed greater consistence and tenacity than it. A section was made through the globular clot at the points where the electrodes had entered it. It was found that the electrolytic clots extended an inch into the mass, in a conical form. The negative had a diameter of 0·75 inch at the surface or base, and had a markedly alkaline reaction; the positive was 0·5 of an inch at its base, and was strongly acid. A few black lines were also exposed in this section, which were apparently connected with the positive electrode, and proceeded from it in wavy and fantastic courses, to be lost in the general blood mass. A microscopic examination of the blood revealed many of those curious marginal modifications of the corpuscles which Rollet and Neumann have fully described."

Experience has also shown that this electric action, this coagulation of the mass of the blood in which there is no mechanical separation of the fibrine from its other constituents, is capable of producing the total and final cure of an aneurism—an additional proof, if an additional proof were required, that the slow method of coagulation, by which what Broca denominated "active" clot is generated (i. e., the fibrine separated from the other constituents and deposited in laminæ), is not the only, though it may be the safest, way of curing an aneurism. In proof that the clots produced by electricity may be as efficacious in the cure of an aneurism as those produced by other means, I will read Mr. Bland's summary of Abeille's case of the cure of an aneurism of the subclavian artery, to which I shall have hereafter to refer again when speaking of the treatment of subclavian aneurism.

"CASE 60. — Size of hen's egg. Under etherisation, four steel needles were made to traverse the tumour to a depth of three-quarters of an inch, and the galvanic pile put in action for not more than five minutes' contact at a time. For about a minute the patient remained insensible, but then immediately cried out and experienced convulsive movements in all parts of the body. The arm of the affected side became especially and extremely violently convulsed. The tumour soon began to diminish, and became

more tense and resisting; pulsation in it gradually subsided, and the radial pulse reappeared [? disappeared]. This condition lasted thirty-seven minutes, the patient being in a profuse sweat; and no operation ever caused such torture. When the tumour had become hard and deprived of all pulsation, the needles were withdrawn and cold applications applied, a compress of one kilogramme weight was placed above the tumour on the course of the artery, and maintained for ten hours. On the following day there was slight vibration in the tumour; the radial pulse had completely disappeared; the whole arm, forearm, and hand cold and engorged, and with sensations of pain and tingling. Venesection on fourth and fifth days; motions of the fingers lost. On the third and fourth days the radial pulse reappeared, but very slightly, and she had intense cephalalgia, requiring venesection, repeated also on the following day. The eschars became detached from the site of the puncture, with but little suppuration. From the fourth day the tumour decreased, and on the twelfth had diminished to one-half the size. On the thirty-seventh day the tumour was no longer prominent, and it entirely subsided at the end of three months. The case was seen two years afterwards; there was no reappearance, and the pulse was rather smaller than on opposite side."

On the other hand, it must be allowed that there is at present much uncertainty as to the value of the method, and great ambiguity as to the immediate effects of any given operation; that those most conversant with the electrical processes and their effects when applied to the living body are far from being agreed as to such important details as—which pole it is best to use; what is the best apparatus; whether coagulation should be produced rapidly or slowly; whether the action should be long continued or not, frequently repeated or almost solitary; and whether the metallic needles should or should not be coated over to defend the superficial parts from the electric action. But such details will be gradually cleared up as our experience of the method increases. As far as my limited practical acquaintance with the subject goes, I should incline to the belief that the action of both poles is desirable, and that the positive pole ought not to be used too long, especially if the battery is a powerful one; that a moderate action should be employed, and that it should be continued for a considerable time (under anæsthesia), until a very decided physical effect has been obtained; and that the soft parts covering the tumour should be defended by coating the stalk of the needle with vulcanite.

We must admit further, in forming an estimate of the value of electricity, that the coagula formed by it appear very frequently not to be stable, but to be liable to melt down again into the blood-stream. At any rate, it seems a frequent phenomenon in this method of treatment to find an aneurism cease to pulsate for a time, and the pulsations to recur very shortly afterwards. Thus, a short time since, with Dr. Althaus's assistance, I applied the galvanic current to a patient of Dr. Ballard, suffering under aneurism of the arch of the aorta. After several previous ineffectual applications of the negative pole, we introduced both poles into the blood of the sac, and kept up a mild continuous current for a considerable time. The effect was considerably to reduce the pulsation and to produce much consolidation. This was very visible in the more superficial parts of the tumour, and particularly in one point where a prominence of the sac had so closely approached the skin as to produce those suggillations of bloody serum which immediately precede the rupture of the sac. The patient experienced considerable relief, and what was very remarkable was, that after he had fully recovered from the anæsthesia under which the operation had been performed, he was astonished to find that the tumour had ceased to beat. As he had been distressed night and day for more than a year by the beating of the great tumour in his chest, it seemed impossible that he could be mistaken; and his wife (who, as well as himself, is a person of intelligence) confirmed his assertion that no pulsation could be felt in the mass. After two hours' quietude a fit of coughing appeared to reproduce the pulsation, but it subsided again for an hour, after which it was reproduced, and when seen next day the pulsation was only a little less than before the operation.

Again, in a case of subclavian aneurism under Dr. Clifford Allbutt's care, to which I shall again refer, the pulsation was quite suppressed for a day or two, and then slowly returned.

Many other instances might be cited of the same fact, while on the other hand there have been cases in which the coagula produced by electricity seem to have been as stable as those formed naturally. This seems to me not so much an objection to the method in itself as a proof that we do not as yet know enough of its detail. The uncertainties and ambiguities referred to appear to me, however, to be a rational and proper ground for discarding electro-puncture, at any rate in the present state of our knowledge, in cases of external aneurisms situated on accessible arteries, where the ordinary processes of pressure and ligature offer safer and more reliable means of cure.

But no one can have read the literature of this subject, even if he has had no personal experience of the method, without convincing himself that by appropriate manipulation, coagula may be produced, in the part of the sac which is acted upon, without any grave inflammatory reaction, or any very serious risk of hæmorrhage, of embolism, or of gangrene opening into the tumour.

NOTES
ON THE
GENERAL PRINCIPLES OF CUTANEOUS THERAPEUTICS.

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(*Concluded from page 72.*)

CLASS III.

I HAVE still to take up the question of the general principles of treatment to be followed in regard to the third class of diseases—those in which the skin is diseased as a direct consequence of disturbance of the general nutrition. *General* treatment is everything, *local* treatment of little value *comparatively*, in these cases. I have nothing to say as regards the acute specific diseases, the eruptions of which are secondary matters, and require no treatment.

As regards the case of disease of the skin dependent upon the existence of special diathesis, there is a general agreement as to the modes and methods of treatment appropriate to each. The strumous diseases are met by cod-liver oil, iron and quinine, and good food; the syphilitic by mercurials and iodide of potassium; and so on. But there are one or two practical considerations calling for particular notice. In the first place, I would say that, as a rule, in treating skin disease, strumous tendencies of the middle-aged and the old are overlooked; in fact, in many skin affections, the minor evidences of constitutional disturbance are apt to be missed. An individual who has been very strumous in early age retains, to a greater or less extent, the tendency to free pus-formation &c. in later life, though it may not be so strongly marked or coincidently exhibited in connexion with conditions which at an earlier age are regarded as indicative of struma. Whenever I find in the middle-aged or old free pus-formation out of proportion to the degree of inflammation—that is, when I cannot account for the free pus-production by the intensity of an inflammation, and this is attended with exuberant flabby granulation in ulcerations,—I regard the case as one in which struma plays an active part. I treat my patient accordingly, and successfully as a consequence. In addition to the strumous, syphilitic, and leprous diatheses, there are other states—call them cachexias—that need to be more generally regarded as leading directly to disorders of the skin: lead-poisoning is one. I have seen unhealthy ulcerations come on in persons who were suffering from saturnine poisoning which healed up under the treatment appropriate to the latter. But perhaps this should have been referred to under the head of medicinal rashes. Then, again, there is the so-called "dartrous diathesis," the nature of which I am wholly at a loss to comprehend from a study of the writings of the French. I suppose it is the gouty diathesis. But I know of no eruption directly due to

gout. Skin diseases may be influenced and modified by gouty habit of body, and this has been referred to in discussing the therapeutics of Class 2. The herpetic diathesis I do not understand, unless it be "rheumatic." The alteration of the general nutrition consequent upon malarial poisoning I think in some cases plays a direct part in inducing skin mischief, and especially attacks of pemphigus and bucnemia tropica, or elephant leg. The appropriate remedies in such cases would be quinine and arsenic and iron of course; and all the diseases named are relieved by these remedies. The connexion of malarial poisoning with skin disease is a matter deserving attention. It is a question how far Delhi boil and its allies are connected with malaria. I own, of course, malarial poisoning may hereby act as a debilitating agent, and give a patient afflicted with a cutaneous disease less chance of recovery than a person free from the effects of its operation upon him; and I see many cases in those returned from abroad in proof of this. The skin affection may be due in consequence of a part of the malarial mischief. But at present our information on this point is anything but satisfactory, yet I feel sure time and further observation will show that there is the closest connexion between the two. The "keloid diathesis" may or may not exist. In some cases the tendency to the development of keloid tumours in all parts of the body is marvellous; and the same may be said of "fibroma," but this may be due to a peculiar disposition on the part of the fibro-cellular textures of the skin, deranged—over-stimulated in some cases—by climatic influences acting upon it, and disposed thereby to undergo change—a disposition independent of the general state of the blood. The evidences, however, at present in our possession are insufficient in proof of the existence of a "keloid" or a "fibromatous" diathesis. It must be shown that these, if diatheses, are hereditary before I can accept them as diatheses.

Neurotic diseases are daily assuming an increasing importance, and properly so. They are connected with definite conditions of general ill-health, and deserve a notice here. Pemphigus, herpes, in some cases general pruritus, and very likely true prurigo, are illustrations. The principles of treatment involve the removal of over-work and fatigue of the body and mind, attention to the tendency to general deterioration of the tissues of the body, which is frequently present, and general wasting of the body; the securing of due rest, change of scene and air, as well as the institution of a special system of neuro-tonicism. It is in these cases that arsenic is frequently beneficial. The sympathetic nervous system is probably particularly involved in such diseases as pityriasis rubra, where hyperæmia seems to be due to a loss of tonicity in the vessels, itself consequent upon disorder of the sympathetic system, the more clearly evidenced by the coincidence of hyperæmic conditions of important internal organs largely controlled by the sympathetic and also the general character of the cutaneous hyperæmia. In these cases "general debility" is particularly marked, patients do not seem to be able to "pick up" strength, and specially to assimilate, and it is only by the most careful tonic regimen, and by care being taken that the powers of the body are husbanded, that recovery can be brought about.

Lastly, I think that we shall in course of time come to recognise that the lymphatic system is much concerned in skin diseases. No doubt it is itself disordered as a consequence of the operation upon the whole body of certain potent influences of ex-malarial poison, but it has yet to be determined how far in certain cases it may be primarily at fault, as in scleroderma. Thus I think that in all cases where the fibro-cellular structures of the skin are specially involved—fibroma, keloid, elephantiasis, &c.—we should seek to determine how far the sympathetic system is concerned primarily or secondarily in the disease. Quinine is a potent agent for good in all cases in which the lymphatics are actively involved in diseases of the skin, whether primarily or secondarily.

A few words are necessary about the local treatment of skin diseases immediately dependent upon, or part of, a general derangement of the system. The remedies should be used with similar intention as in the case of local applications spoken of as regards Class II. After all, they are quite subsidiary; and I will only say that, when used to remove exuberant growth or to heal ulcerations, the best time to begin their employment is when internal medicines are just beginning to make an impression on the disease. If the general condition upon which depends the development of an eruption or an ulcer be left uninfluenced by internal treatment, the use of irritants or caustics will often tend to spread or to favour the outbreak of fresh mischief, as might be anticipated. The exuberant granulations of a strumous sore or the unhealthy ulceration in syphilis are especially aided in their disappearance or their healing by the mercurial plaster or other application used in conjunction with the internal remedy at the time that the latter has begun to improve the general condition. However, this is self-evident. But I do think that local applications are sometimes the cause of harm, simply because they are too much trusted to for the cure, and are not subordinated, as regards their use, in due time to general remedies. The use of soothing applications in neurotic diseases to allay local irritation due to general causes is necessitated by the discomfort of the patient and the harm likely to be done by reflex action &c.

Summary.

From the foregoing observations I hope it will be evident that the treatment of diseases of the skin consists in something more than the prescription of arsenic. I have asked one after another, "Why do you give arsenic?" and the invariable answer has been, "Well, one does give it, you know!" or, "Well, what else shall we give?" I have attempted to prove that it is impossible to formulate a particular treatment for a particular disease—i. e., to say this or that man has this or that disease, and therefore he must have such and such treatment. He requires a combination of medicamentation suited not only to the disease itself, but also to his individual peculiarities and concomitant circumstances; and it needs all the knowledge and tact of the physician to make this combination happily. In regard to local measures, I am certain that they frequently do harm, from the injudicious employment of stimulants and astringents where simple soothing means are called for. But, thanks to our advancing knowledge of therapeutics, better principles begin to prevail.

Harley-street.

LARGE OVARIAN CYST; TAPPING; CYST INFLAMMATION; OVARIOTOMY; RECOVERY.

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The following case of ovariotomy is probably worthy of record as illustrating the advisability of performing the operation when the ovarian disease is attended with certain formidable complications, and which until lately were generally considered to contraindicate its performance.

Mrs. F——, aged sixty-three years; a widow lady; never pregnant. First noticed an enlargement of the abdomen three years ago, which was pronounced by her medical attendant to be caused by an ovarian tumour. She had for several months abandoned all hope of recovery, as she was informed by several medical men whom she had consulted that her age was against any attempt to remove the tumour.

She came under my care on the 25th October, 1871. I found the abdomen symmetrically but enormously distended, and the ribs on each side everted. Fluctuation was well marked. Tympanitic sound elicited only quite posteriorly on each side. Respiration laboured. Copious bronchial secretion, with incessant cough. Pulse 115, feeble and intermittent. Bowels constipated. Appetite impaired.

I suggested immediate tapping, and on November 28th I removed fifty pints of highly albuminous fluid. Twenty-eight hours after the tapping the chest symptoms became much aggravated; the lividity of countenance, hurried respiration, and increased bronchial secretion being so marked as to make her recovery seem almost impossible. Under suitable treatment, however, they gradually abated, and in three weeks the patient was able to leave her room.

A careful examination of the tumour was now made. It appeared to comprise one large cyst, with some solid matter

in the left iliac region, which was believed to be adherent to the parietes of the abdomen.

The patient improved in health and strength; but the cyst rapidly filled—so much so that I advised her to be again tapped, to which she consented; and on January 27th, 1872, twenty-four pints of a dark-coloured albuminous fluid was removed, being evidently mixed with blood. She recovered from the immediate effects of the tapping tolerably well, and could take moderate exercise.

Three weeks after the last tapping she complained of being very unwell. The bronchial symptoms were much worse; her strength and appetite failed her; she had frequent attacks of vomiting, and had several distinct rigors. There was a dull pain in the lower part of the abdomen, the latter being generally very tender to the touch. Pulse 128, feeble and irregular. Temperature 102°. These symptoms, in spite of all treatment, became rapidly worse, and she could scarcely bear to be moved in bed.

On February 25th she appeared not likely to live many hours. Pulse 128; temperature 104°. Vomiting every twenty minutes; constant thirst; delirium, and tossing about the bed. She seemed insensible to abdominal pressure. Her friends had been with her all night, expecting her death hourly. At this visit I was anxiously appealed to by her friends for my opinion, and I informed them that there was only one chance for her, and that perhaps a very faint one—namely, the removal of the tumour. Some of her friends very strongly opposed any operative interference. I endeavoured to fix the attention of the patient in order to explain to her the critical condition she was in, and also what remedy I proposed, but did not thoroughly succeed; and I left the room fully expecting not to see her alive again. I ordered her, however, five-minim doses of hydrocyanic acid with eight of tincture of opium every two hours. The patient's sister followed me out of the room to take counsel with me as to the future treatment, and, after some discussion, I requested her to consult with the patient if she saw a favourable opportunity, as well as with her relatives, and let me know the result of their deliberations, as the patient was not in a condition to think or act entirely for herself. In the afternoon I was informed that, in a somewhat lucid interval, the patient wished to have the operation performed as soon as practicable, and that the majority of her friends had agreed with her. I then fixed an early hour the next day for it to take place.

26th.—The medicine and stimulants ordered yesterday appeared to have somewhat relieved the delirium, but the other symptoms continued much the same. She was anxious for the operation, which I proceeded to perform assisted by Mr. Whitcombe and my sons. My colleague, Professor Norris, ably administered the chloroform. An incision of three inches only was made, and the cyst exposed. The patient was turned on her left side when the cyst was tapped, but on traction being made it gave way, and the contents, with about two pounds of fibrinous exudation, escaped. By careful pressure of the abdomen Mr. Whitcombe succeeded in preventing any contents of the cyst escaping into the abdominal cavity. There was a firm adhesion in the left iliac region, a portion of which required the use of the actual cautery. The cyst was then withdrawn; it arose from the left ovary. The pedicle was nearly six inches in length; it was kept outside the abdomen by means of a clamp. Two sutures transfixing the peritoneum and three superficial ones were only required to close the wound. Lint dipped in a solution of carbolic acid constituted the after-dressings. The clamp was removed on the fourth day. On account of the chest symptoms chloroform was administered with some difficulty and danger. Reaction was soon established, and the patient became at once quite rational. The sickness ceased from the moment of the completion of the operation, which occupied twenty minutes.

The pulse continued quick and occasionally irregular until the third day, when it was 98; the temperature 99°. On this day, after a fit of coughing, prolapse of the pedicle occurred to the size of a hen's egg, and was accompanied with a severe pain in the right inguinal region. By means of a daily application of a strong solution of carbolic acid combined with pressure to the extruded portion of the pedicle it rapidly diminished in size, and eventually no traces of it were manifest. Nourishment and stimulants, which were commenced within an hour after the operation, were administered regularly and freely by the mouth throughout the convalescence. Beef-tea, opium, and brandy injections were occasionally given during the first three days, and at the end of the week the patient was allowed two mutton-chops daily, which were very much relished. The bronchial symptoms were very troublesome and threatening for three weeks, and were only relieved by gallic acid and large doses of opium. The patient made a good recovery, and a month after the operation she drove sixteen miles in a cab in search of apartments in a more salubrious atmosphere. She has become much stouter, is in perfect health, and only fears that the inclement weather may reproduce the bronchial symptoms.

Birmingham.

THE RELATIVE FREQUENCY OF DISEASE BETWEEN THE RIGHT AND LEFT SIDES OF THE HEART;

DEGENERATION OF THE HEART, ITS CAUSES AND MEANS OF AVOIDANCE.

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(*Continued from p. 254.*)

Heart of newly hatched trout—How affected by the negation of oxygen and an increase of carbonic acid—Influence of carbonic acid upon the contractile fibre of the heart—Effects on the human heart of pre-breathed air—Defective ventilation a frequent cause of sudden death in heart disease—Importance of pure air in cardiac degeneration.

THE object of my last communication was to show that the relative frequency of disease between the two sides of the heart depended, as a rule, upon age; that the left side of the heart was the one to suffer before the age of forty, the right side of the heart after that age. It was also shown that diseases of the left side of the heart are generally the result of inflammatory action; diseases of the right side of the heart, of tissue-degeneration, or of mere mechanical influences, as of backward pressure of blood upon the right cavities of the heart from obstruction to its flow through the branches of the pulmonary artery.

It was further stated that, according to the ordinary law of life, tissue-degeneration, or natural decay, usually begins at the age of forty; that, with its advent, the left side of the heart becomes less prone to inflammatory disease, and approaches more and more closely in its tendencies to the diseases of the right side of the heart; and that the degenerative tendency of the latter is, after this age, greatly influenced by the three great vital functions—the action of the brain and nervous system, respiration, and circulation.

It was thus shown that, to maintain the heart's structures in as healthy and sound a condition as they could possibly be maintained under the law of natural decay, these vital functions must neither be overworked nor fall short of their necessary duty—that, in fact, regular, natural action is their law of life.

I showed the effect of impure air in promoting the degenerative tendency in the structures of the heart, and especially in those of the right side of the heart, after the age of forty. I was thus led to a passing consideration of the baneful influence produced upon the heart by badly-ventilated houses, schools, manufactories, pits, theatres, underground railways, and all places of a similar character.

To this point I return, to show the influence of an increasing quantity of carbonic acid in the air respired upon the contractility of the muscular fibres of the heart.

I take for my example the newly-hatched trout. During the winters of 1869–70 and 1870–71, I hatched some thousands of this fish, many of which I daily submitted to microscopic examination. The result of my investigations, in reference to the action of the heart and to the influence upon it of a decreasing quantity of oxygen and an increasing quantity of carbonic acid in the water in which the fish was confined, shows,—

That, on placing the fish in a glass trough containing a

quantity of water, the heart is seen, under the microscope, to be affected in the following manner:—

In the first few moments of examination the venous blood, collected by the veins from the head, back, and yelk-bag (the first two of which unite to form a bulbous vessel into which the third opens), is seen to be projected with considerable force and rapidity into the upper (auricle) of the two cavities of which the heart is composed, and thence as instantaneously into the lower (ventricle) cavity, which contracts with equal rapidity, and forces the blood into the branchial artery, which conveys it to the gills. The projection of the blood into the auricle, its passage into the ventricle, and its expulsion therefrom, are but the work of an instant. As the blood enters the auricle both it and the ventricle seem to anticipate the charge of blood; but especially is this the case with the ventricle. Before the blood well touches the valve which guards the entrance from auricle to ventricle, the latter is observed to shorten its longitudinal diameter, to visibly meet, as it were, the coming charge of blood from the auricle, and to force it instantly into the branchial artery. There is no delay whatever of the blood in the auricle or ventricle. It is shot in a straight line from the vena cava through the auricle and the auriculo-ventricular valve, caught by the contracting ventricle, and deflected and forced, without a moment's delay, into the branchial artery.

From these observations it was evident that the contraction of the heart was not excited by the distension of its cavities, but that it was induced by the mere impingement of the blood upon its lining membrane. In contracting the ventricle was seen to roll about one-third upon its axis, by which a portion of that part of it which was previously out of sight was brought into view. As soon as it had delivered its blood into the branchial artery, it relaxed, and increased again its longitudinal diameter, recoiling from systole with an energy and a rapidity equal to those of its contraction.

In three or four minutes the heart is observed to contract both less quickly and less energetically. A very short time after this the blood can be seen gently pouring into the auricle, and thence into the ventricle, which latter now allows itself to be about one-fourth filled before it contracts. It now expels its blood, and again dilates; but its dilatation, like its contraction, is not so instantaneous as it was when first observed under the microscope. In a short time longer the sensibility of the heart is greatly diminished, for the blood is seen to be accumulating in both the auricle and ventricle, but especially in the former, from both of which cavities it is now only partly expelled by the contraction of the heart.

At length, just before death, the blood is seen to flow from the auricle into the ventricle, thence into the branchial artery and along it, the heart being passive during this time, and only now and then at long intervals manifesting a very slight and partial contraction. During the whole of this time the blood is coagulating more and more in the auricle and ventricle, but especially in the former; and when at length the heart has ceased to beat, the auricle and the vena cava opening into it are fully distended, whilst the ventricle is only partly distended with black-red blood. In the last moments of life, after the heart has ceased to beat, the branchial artery is seen to be pushing forward its slender current of blood, and to become at length quite empty and transparent.

Here, then, as the oxygen dissolved in the water in which the fish is confined becomes exhausted, and as the carbonic acid increases, the sensibility and contractility of the heart are diminished, and at length entirely destroyed. The negation of oxygen, and the increase of carbonic acid, have culminated in the death of the fish.

Precisely the same effect is produced upon the human heart by an accumulation of carbonic acid in the air respired.

In the ordinary condition of the atmosphere, in which carbonic acid does not exceed one part in a thousand parts of that medium, its effects upon the heart are inappreciable. When, however, the carbonic acid has accumulated to the extent of one per cent. of the air respired, it begins to produce a slight feeling of faintness, and some degree of uneasiness across the brow. At 2 per cent. the heart's action is quickened, the sense of faintness is greater, there is slight giddiness, with heaviness and constriction of the head, together with nausea. At 3 per cent. all these symptoms are increased. There are vertigo, fluttering of the heart, nausea and sickness, followed by an overwhelming sense of muscular prostration. At this moment the contractions of the heart become very feeble, the skin relaxes, and is bedewed with a cool, clammy perspiration. These symptoms deepen with the increasing quantity of carbonic acid in the air respired until the utmost limit of toleration is reached, beyond which life can no longer be maintained. At this stage lethargy supervenes; and, at the moment of its occurrence, the heart begins to beat less frequently, and much less powerfully than before. This condition is the parallel of that observed in the young trout, when the blood begins to accumulate and to coagulate in the auricle and ventricle, and when the heart's sensibility and contractility are reduced in the greatest degree.

From these effects it is certain that confinement to an atmosphere impregnated with carbonic acid, even to the extent of one per cent. only, quickly deranges the function of the heart, and ultimately deteriorates the tissues themselves of that organ.

The greater the percentage of carbonic acid in the air respired, the more quickly and the more profoundly are these effects produced. The constant breathing of air containing one per cent. only of carbonic acid proves fatal to life; but if it is respired for a short time only, functional disturbance alone is then and there produced. *It is, however, certain that in this functional disturbance lie the germs of organic mischief, and that frequent repetition of the cause will undoubtedly end in organic disease. Hence the impure atmosphere of the bedrooms of the poor, and, indeed, of many of the middle class, proves a sharp spur to the degenerative tendency manifested by the heart, and especially by the right side of the heart, after the age of forty.* Such bedrooms are generally small in their superficial area, low-pitched, and often lighted by a diminutive window, which at night is kept constantly closed; and having a door which opens to the interior of the house, but which is also closed during the occupation of the rooms. Nay, to prevent the slightest admission of fresh air, the crevices of both window and door are most carefully stopped; and, to render the matter still worse, a fire is not unfrequently kept burning during the winter nights.

What must be the effect produced upon the air of such rooms under the conditions named? I take for example an average-sized bedroom in the cottages of the poor—say, a room twelve feet long, ten feet wide, and eight feet high. This gives a cubical space of 960 feet, which is not more than half the cubical space allowed each patient in our best arranged hospitals. In this room, with its diminutive window and door constantly closed, three, four, and frequently a greater number of persons pass the night of eight or ten hours' duration. No provision has been made for the admission of fresh air—none for the escape of the carbonic acid exhaled during respiration. What little provision did exist in the crevices formed by the badly-fitting door and window has been carefully abrogated by sand-bags, rolls of rags, and stuffing of every description. Thus the air of the room becomes poisoned with carbonic acid, and in this condition it is breathed and re-breathed, to the manifest injury of the heart.

A simple calculation will enable us, if not to determine with exactitude, at least to approximate to the amount of carbonic acid exhaled by each sleeper, and consequently to the degree of vitiation which the air of the apartment undergoes. I fix the number of respirations at its minimum —14 per minute; the quantity of air exhaled at each expiration at 20 cubic inches; the quantity of carbonic acid contained in the expired air at 4 per cent.; and the duration of the night at 8 hours. Hence, $14 \times 20 \times 8 \times 60 = 134400$ cubic inches, or 77·77 cubic feet, of air expired by each sleeper during the night of eight hours. This expired air contains 4 per cent. of carbonic acid. $\therefore 100 : 77{\cdot}77 :: 4 = 3{\cdot}11$ cubic feet of carbonic acid exhaled by each sleeper during the night. Suppose the number of sleepers occupying the bedroom to be four, this will give $3{\cdot}11 \times 4 = 12{\cdot}44$ cubic feet as the quantity of carbonic acid which is exhaled by the four sleepers during the eight hours of night. The room itself contains 960 cubic feet of air, and through this 12·44 cubic feet of carbonic acid would have been diffused by the termination of the night. It therefore follows that, if no fresh air entered the room, and if in consequence the carbonic acid had no means of escape, the air of the apartment would, at the end of the eight hours of night, contain

1·29 per cent. of this gas: a quantity sufficient to produce serious results.

This statement, however, does not represent all the facts of the case. It must be remembered that the oxygen contained in the air of the room would be constantly undergoing reduction by respiration during the night. If the quantity thus consumed were determined from the quantity of carbonic acid exhaled, allowing for the fact that 15 per cent. more oxygen is taken into the blood than is contained in the carbonic acid of the air expired, it will be found that from one-third to one-half of the oxygen originally contained in the air of the room would have been consumed by the end of the night. This reduction in the quantity of oxygen, and the great increase of carbonic acid, would affect the body in two ways—firstly, by a deficiency of oxygen, and secondly, by an excess of carbonic acid, in the air respired. Hence the reduction of the one and the increase of the other would render the air far more injurious than if only one of these changes in its constitution had taken place.

The actual result is not, however, in strict accordance with this calculation, because fresh air, although in limited quantity, does find its way into the room, and carbonic acid does, to a limited extent, find its way out. These, therefore, would modify the constitution of the air of the room at the close of night; but they would still leave it with an excess of carbonic acid injurious to life.

It is found that when air moderately impregnated with carbonic acid is inspired it greatly impedes the exhalation of more from the lungs; and that the greatest quantity of carbonic acid which exists in pre-breathed air never exceeds 10 per cent. It is much to be feared that to this degree of vitiation the air of the bedrooms of the poor and of others not unfrequently rises by the too prevalent system of excluding fresh air, and by the frequent absence of provision for the escape of that which has already passed through the lungs.

Can it then be a matter of surprise that death from diseased heart should so often occur during the night?

In thousands of instances of cardiac disease life is thus sacrificed, where had but proper ventilation of the bedrooms been observed, the subjects of such disease might, despite the cardiac mischief, have continued to live for an indefinite time.

It has frequently been my duty, during a practice of nearly thirty years in the midst of a large community prone by the habits and particular avocations of the people to heart disease, to investigate cases of "found dead" in bed, and I have often been compelled to refer the immediate cause of death to the effect of carbonic acid liberated by respiration and confined to the apartment, in destroying the sensibility and contractility of the heart, rather than to the direct influence of the diseased heart itself.

I remember that on one occasion I was summoned to a case which had occurred in a bedroom 15 feet long, 12 feet wide, and 8 feet high. In this room, with the door and window closed, no fewer than twenty persons slept night after night! Can anyone doubt that the air of such a room would be charged to excess with carbonic acid exhaled by respiration? Those who perished in this manner were beyond the age of forty; and, in every instance examined, the right side of the heart was either primarily affected by tissue-degeneration, or by disease consecutive to mischief in the left side of the heart and lungs.

Often indeed in the dwellings of the middle and higher classes of society the provisions for ventilating both their bedrooms and their day-rooms are miserably inadequate to preserve health. The consequence is that cardiac disease is promoted to an inconceivable extent. *There is no other disease in which the demand for cold, fresh air is so urgently pressed by the patient as in cardiac disease. There is none in which a constant supply of pure air is more needed—none in which it is more grateful to the patient, or in which it has a more immediately beneficial effect.* At all times and seasons—in the depth of winter—by day and by night—a patient suffering from a paroxysm of cardiac asthma will hurry to the open door or window, and there, with his body hanging half out, will remain, with scarcely any vestments upon him, breathing the cold air until the paroxysm has ceased. Ought not this urgent, this powerful supplication of nature to teach us the importance of ventilation, and of a full supply of fresh air in the treatment of heart disease?

I hesitate not to say that free ventilation—the free admission of pure air into the apartment by day and by night—is one of the most important remedial measures which can be adopted in the treatment of this disease.

Where this means is defective, but where, nevertheless, the vitiation of the air of the bedroom does not exceed 1 per cent. of carbonic acid, a sensible effect is produced upon those who have slept within its influence. They complain, on leaving their bed, of weakness; their limbs tremble; they feel somewhat giddy, and their head feels heavy, or it aches. The least effort disturbs the heart's action, which is somewhat quick and feeble; their countenance is pale; the lips are not unfrequently somewhat blue; and the tongue is covered with a thin, whitish, and somewhat slimy fur. The appetite is in abeyance; there is a feeling of nausea; and the first evacuation is generally dark in colour.

What is the pathological condition of such patients at this moment? Simply this. The blood contains an excess of carbonic acid, which, circulating with the blood through every organ, disturbs the natural action of every organ, blunting its sensibility, vitiating its particular function, and interfering with those molecular changes which constitute healthy nutrition.

A person thus affected does not usually die. The body, removed to a pure atmosphere, begins at once to excrete the carbonic acid by the lungs, the liver, the skin, the kidneys, and the bowels, and in the course of a few hours the more visible manifestations of its baneful effects have passed away. It however often happens that a sense of weariness and muscular debility is felt for days afterwards. Night, too, frequently places such subjects in the same condition as before. The same bedroom is occupied; the same inadequate means of ventilation continue; the same accumulation of carbonic acid takes place; and the same effects upon the bodily organs are repeated. Blood charged with an excess of carbonic acid again pervades every tissue of the heart, diminishing its vitality, lowering its sensibility, and assimilating its nutrition to that of the reptilian heart. But the low character of the nutrition of the reptilian heart does not accord with the comparatively quick circulation, rapid nutrition, vital power, and energy of action required by the human heart. The one cannot be substituted for the other. In man the change results in disease where disease does not exist—aggravates disease where it is already present.

To point out the particular changes which are thus produced in the tissues of the human heart will form the subject of my next communication.

THE WATER-SUPPLY OF MILITARY CANTONMENTS IN INDIA.

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As I am in some measure responsible for what Inspector-General of Hospitals Dr. Muir, C.B., considers the exaggerated opinion that now prevails regarding the impurity of the water-supply of the Bengal military cantonments, I think it right to lay before the profession some detailed information which will enable those who take an interest in this subject to form an independent judgment on the question at issue.

Dr. Muir (*vide* Army Medical Report for 1870, p. 158) considers the present supply, with a few exceptions, adequate and wholesome. In my opinion, on the other hand, the supply is, with very few exceptions, so obviously exposed to contamination that its use is attended with the gravest dangers to health. Which of these two contrary opinions is the correct one can only be decided by an appeal to facts, and I think it will be found that facts which are quite beyond dispute or question afford sufficient data for a decision. I do not intend to adduce any evidence of a doubtful character. I rely upon facts which are universally admitted. In the plains of Upper India where the bulk of the Bengal European army is quartered, the water-supply is, with a few exceptions, taken from wells sunk in the alluvial clay to a sandy water-bearing substratum which

everywhere underlies the surface soil at a depth varying in different stations from 20 to 120 feet. The water is lifted from the wells by means of small leather buckets pulled up hand over hand and then emptied into a goat-skin, to fill which the bucket has to be lowered and lifted some four or five times. Each water-carrier has his own bucket and rope. In many cases a buffalo-skin carried on a bullock's back is used for the conveyance of water. The skins being permanently sewn up except at the neck, where there is an opening for the admission of the water, and which is closed by a piece of string when the skin is full, cannot be cleaned after they are brought into use, and as the same skin is used for the conveyance of water of different kinds, for watering roads and for bathing, cooking as well as for drinking purposes, it is obvious that a water originally quite pure is liable to become contaminated by being passed through a tainted mussack (skin). Old mussacks, whenever opened for examination, have been found to contain a multifarious collection of dirt. With such a rude system of distributing water the wells are of necessity very numerous, for it must be remembered that military cantonments cover a very large area. It used formerly to be supposed that the main security of the troops against cholera consisted in having their barracks widely dispersed. Thus, the Mianmir cantonment, originally intended for the accommodation of about 6000 men, though now occupied by about half the number, covers an area of six square miles, and the barrracks for one regiment only are spread over a space of 180 acres. Other cantonments are equally or even more widely dispersed. All water, for whatever purpose required, being provided in the rude way I have described, it was necessary to have the source of supply near and convenient, so as to economise the cost of carriage. The capital sunk in the construction of the very numerous wells scattered all over the face of cantonments would, I believe, have sufficed to lay on water in pipes to every barrack. Owing to the wells being uncovered, and the water being lifted by dipping buckets, filth of various kinds collects in them with great rapidity. A black deposit forms, most offensive in smell and teeming with animalcular life. When a native is convalescent from any severe sickness he considers it his duty to take the Bath of Recovery near the well that supplies his water. There he washes his person and clothes, and not unfrequently the water he uses may be seen dripping back into the well. Again, it is very common for dead dogs, cats, &c., to be thrown into the wells, and human bones have been taken out of a well used for the supply of the troops. Only two years ago the bloated corpse of a native was removed from one of the Rawulpindi wells after several days' immersion These facts show that the wells of Indian cantonments are exposed to contamination from a great variety of sources; and that this risk is enhanced by the mode of distributing the water. But the risk does not end here. It is usual to filter the drinking water, and the filtration is effected as follows:—Three earthern vessels, with a capacity of about three gallons each, are placed one above the other on a wooden tripod fixed in one of the barrack verandahs. The middle jar contains the filtering medium, consisting of sand and a few lumps of wood charcoal. The sand was usually brought from the dry bed of the nearest river or stream, and, being apparently clean, it was not submitted to ablution. But there can be no doubt it was often very impure. Chemical analysis shows the filtered water to have been in many cases much more impure than the original water—a fact not difficult to explain when it is remembered that the dry nullah beds, from which the sand is taken, are favourite places of resort with natives for purposes of nature. In a regiment there are about fifty or sixty filters in use, and being scattered in many buildings over a very wide area, it is impossible for the medical officer to exercise any effective surveillance over them. But there is still another risk of contamination. In order to get a drink of water a man has to stoop the water jar, or dip his tumbler into it, and in either case his fingers come in contact with the contents, and as soldiers' latrines are not provided with paper, the finger not unfrequently supplies its place. If there be any truth in the opinion that the cholera virus is contained in the intestinal discharges, the risk of the drinking-water being contaminated in the way now suggested is very considerable. A man suffering from thirst, a very common premonitory symptom of cholera, would be most likely to infect the drinking-water of his comrades.

I have, so far, described the system of water-supply common to all cantonments in the plains of Bengal. The facts stated will enable the reader to judge whether the system is capable of furnishing a safe and wholesome water, more especially in a country where viruses diffusible through that medium are so common, and where, owing to the heat of the climate, the demand for drinking-water is so frequent and urgent. In England men have rarely occasion to drink except at meal-times; but in India, especially in the hot weather, the craving for water is frequent and irresistible.

But some cantonments are in a much worse condition than others. Even Dr. Muir is dissatisfied with the supply of Peshawur, and yet it is only a few years ago that even that station was reported to have a good supply of water; and, in reporting on the great epidemic of cholera which decimated the troops there in 1867, the Inspector-General of Hospitals thought that the outbreak was due "to atmospheric commotion, caused by a heavy dust storm." He had no complaint to make of the water-supply, the state of which is not mentioned in the report. In 1869,* Dr. Muir, referring to "the fearful tragedy" of that year at Peshawur, writes that "all our efforts to stay the ravages of cholera have hitherto been fruitless"; but he does not say a syllable of the state of the water-supply, as if any efforts could possibly have been successful with the water-supply in its present condition. It marks a considerable advance of opinion to find Dr. Muir approving of the action taken by Government in sanctioning a large outlay for the improvement of the Peshawur water-supply. But many other stations are only a few degrees less dangerously situated as regards their water-supply. Amballa, which was so severely smitten by cholera only a few weeks ago, is one. As at Peshawur, a great portion of the population of that fine station derives its water-supply from an open gutter which flows along the side, and below the level, of the main road, so that after rain it receives the drainage of the road. It would occupy too much space to describe in detail the defects of the water-supply of particular stations. It will suffice to quote the decision of the Army Sanitary Commission on the detailed account of the water-supply of Punjab stations, given at page 281 of the report of the measures adopted for sanitary improvement in India for 1870. The Commission observes:—

"It will be seen that this list includes the most important localities in the Punjab and the principal hill stations, and yet at scarcely one of these places is there a water-supply which can be used for domestic purposes with safety. The facts in regard to these waters are many of them of an extraordinary character. It scarcely excites surprise when the condition of water drawn from old native wells in fouled ground is found to be dangerous to health, for facts of this kind are familiar enough; but what can be said of methods of providing large communities, especially Europeans and European soldiers, with water when the only thing which has been done has been to find a good water source, and to leave everything else to haphazard! The only reason why such a condition of things should exist at the present time appears to be that hitherto the facts have either been unknown or their importance has not been estimated at its true value."

It is necessary to remember that the facts upon which the Army Sanitary Commission based their decision have never been called in question.

But is it true, as Dr. Muir asserts, that no large amount of the sickness to which the troops are subject is caused by bad water? A very few words will suffice as an answer to this question. From one hundred to two hundred men die annually from three diseases—viz., fever, dysentery, and diarrhœa. The fever deaths appear in the returns under the head of continued and remittent fever, but it is at last pretty clearly made out that three-fourths of them at least are genuine typhoid. Deaths from this fever are found to occur all over the country. Of all the causes to which this fever has been traced in this country, there is only one in universal operation in India. It cannot be due to sewer-gas or cesspits, because there are no sewers or cesspits. For several years the latrines have been on the dry-earth principle, and all excreta, solid and liquid, have been carted a

* Vide Army Medical Report, No. xi., p. 279.

considerable distance away from the barracks. The conservancy establishment is on a most liberal scale, and nothing can exceed the cleanliness of all stations where European troops are quartered. With ninety superficial feet of barrack space per man, and barracks amply ventilated, it is impossible to refer the fever to overcrowding. Dr. Bryden, it is true, is of opinion "that the disease is not due to any local cause whatever."* He attributes it to the influence of heat on the nervous system of young unacclimatised men. The only reason he assigns for this opinion is that the disease prevails with the greatest frequency and intensity in the hot weather. But there is no doubt that it prevails in the cold weather also, and it has been recognised in the Himalayas, at a height of near six thousand feet above the sea level, in April, when the mean temperature was only 68° Fahr. These facts show that heat is no more essential to the production of the disease in India than it is in England or in Iceland, where also it is endemic. Nor can it be due to bad drainage, because it appears at some of the driest places in the world, where the subsoil is perfectly dry to a depth of thirty feet or more.

Typhoid in England is caused in the great majority of cases by excrement-tainted water. Are we to believe that in India it arises from heat or some other unknown cause? It appears to me unnecessary to resort to this explanation while an adequate one exists in the state of the water-supply. The enormous quantity of impure water that men drink in the hot weather sufficiently explains the special prevalence of typhoid as well as of dysentery and diarrhœa at that season.

Now, what is the significance of these facts? They show that the importance of water as a medium for the diffusion of epidemic viruses is not yet recognised with sufficient clearness by high medical authorities in India. Accustomed to seek in "atmospheric commotions," "pandemic waves," and an "epidemic constitution of the air," for an explanation of outbreaks of cholera and other diseases, they have overlooked the tangible and obvious physical defects from which such phenomena have been proved to originate in England. Dr. Muir, while admitting that "a pure water-supply is one of the first conditions of health, and must be worked up to at any cost," yet denies that any large proportion of the diseases to which the troops are subject arises from the present state of the water-supply. But if this be true, what justification have the Government for spending £30,000 in improving the water-supply of Peshawur. The Government manifestly expect to recoup this outlay by the prevention of sickness due to the use of tainted water, and I have no doubt the hope will be realised. This is the hope on which similar reforms are projected for other stations. It is disappointing to find an officer of Dr. Muir's eminence and reputation throwing discouragement on those proposals by stating that the evils of the present state of things "have been exaggerated, and that with few exceptions the water-supply is adequate and wholesome." It is the expression of views like these that has so long delayed the reform of the water-supply of Indian cantonments. Government has always been ready to do whatever was considered necessary for the health of the troops. In enlightened appreciation of the importance of sanitary improvements the Indian Government is second to none in the world; but its attention has been directed to matters of secondary importance, and so the results achieved afford no adequate return for the vast expenditure incurred in the last ten or twelve years on sanitary measures.

In the matter of water-supply some improvements have already been effected, but they fall immensely short of what is needed. A hand-pump or two have been sanctioned for each cantonment. But what is the use of one or two or even half-a-dozen pumps in a cantonment covering six square miles? A man who goes to the pump will doubtless be able to get good water, but how often will men be driven by stress of thirst to drink from the nearest dirty well they may meet? The water-carriers are to take the drinking-water for the troops from the pump. Such is the order, but it will be necessary to keep a sentry over them to enforce compliance with the order, otherwise the nearest well will be indented on, whether dirty or pure. At Allahabad a Normandy's condenser has been supplied, so that in their barracks the troops will be provided with filtered water; but whenever they leave their barracks, whether on duty or pleasure, to go to the bazaar or the parade, they must use the dirty well water. Under an Indian sun a man must drink plentifully, and thirst is often so urgent that any dirty stuff that comes to hand is drunk greedily.

I will only say, in conclusion, that any reform of the water-supply which is to be of much practical value must provide not only for the wants of the European soldier, but of the native population among which he lives. The pumps, and filters, and condensers already sanctioned will be of little use if the native population of a cantonment are left exposed to the ravages of pestilence.

Sydney-place, South Kensington.

* Vide Seventh Annual Report of the Sanitary Commissioner with the Government of India, pages 286-287.

ON A CASE OF TRAUMATIC TETANUS.

BY G. W. ROBERTS, L.R.C.P. ED., L.F.P. & S. GLAS.

HUGH J——, aged fifty, farmer, a dark, short, thick-set man, on Feb. 16th received a wound on the back of his left hand which was of an extremely lacerated nature. For the first fortnight after the injury he did well until he attended a sale of live stock and got cold. The same evening he complained of great pain in his hand, and also of having a stiff neck. Next morning I was summoned to see him, and found him suffering from great pain in the hand and a contracting pain in the pit of the stomach through to the back; his voice was weak and feeble, and the muscles of the neck and face contracted; pulse 100. I ordered a poultice for the hand, and prescribed a simple saline mixture with ten grains of Dover's powder to be taken immediately. In the evening I was sent for again, and found him attacked with spasms of the trunk and lower extremities. The abdominal muscles were hard and contracted. Spasms were produced by the most trivial cause, such as a draught of cold air by opening the bedroom door. Even the slightest noise made in the room would bring on the most intense tonic spasms of the trunk and lower extremities. These spasms produced complete opisthotonos of about generally two and a half minutes' duration. The features wore a peculiar expression, as if the patient was constantly laughing; the angles of the mouth were drawn downwards and sideways, the forehead wrinkled, brows knit, eyes sunken and fixed, pupils dilated; the pulse was weak, and rose as high as 140; the body was bedewed with a cold clammy perspiration; the temperature rose as high as 107° Fahr.; had great difficulty in swallowing liquids.

My treatment from the first outbreak of spasms was by the subcutaneous injection of a forty-eighth of a grain of solution of atropia twice a day, half-ounce doses of succus every three hours, and half a grain of muriate of morphia at bedtime with the object of inducing sleep. I held a consultation with my colleague, Dr. E. Pierce of Denbigh, who, in addition to the above treatment, advised thirty minims of tincture of Indian hemp every three hours, also a poultice of tobacco and opium for the wounded hand. Strong beef-tea and brandy was administered, which the patient managed to take with very great difficulty. We had also recourse to injections of beef-tea, port-wine, eggs, &c.

On the twelfth day following the first spasm my patient was free from any spasmodic attack, and remained so, but the stiffness in the neck and extremities continued for some considerable time. By the end of April he was perfectly recovered.

St. Asaph, Flintshire.

THE BILE PIGMENTS.—By the action of sodium amalgam on an alkaline solution of bilirubin, out of contact with air, Maly (*Ann. Chem. Pharm.*, clxi., 368) has obtained a yellow colouring matter of feebly acid character, which he names *hydro-bilirubin*, and believes to be identical with the colouring matter obtained by Scherer from urine, with that obtained from fæces by Vanlair and Masius, and also with Jaffe's *uro-bilin*. He assigns to it, in a later paper, the formula $C_{32}H_{40}N_4O_7$ (new notation). This direct conversion of bile pigment into urine pigment is highly interesting.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum propriâs collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

SYPHILITIC DISEASE OF THE SKULL.

MR. HUTCHINSON has lately had under his care a series of interesting cases of syphilitic disease of the cranial bones. One of the cases opens up the vexed question of syphilis lying dormant, as it were, many years, and then springing up into active mischief. These and kindred cases should teach us to be always guarded in our prognosis in a case of syphilis; for, although the disease may be apparently cured for many years, yet there is abundant evidence that symptoms may show themselves ten, twenty, or even thirty years afterwards, the patient probably in the meantime having married and had children, who may or may not be free from symptoms of hereditary syphilis.

Syphilitic disease of the skull, and probably of the brain or dura mater, with nodes and extensive ulcerations on other parts; fits, mental derangement; iodide of potassium ill-tolerated, but producing rapid healing of the ulcers. — Maria F——, aged forty-three, was admitted on Jan 27th, 1872, in a most wretched state from destitution and the suffering caused by numerous large syphilitic ulcers. She had many deep ulcerations on the scalp, extending to the bone; there were besides large ulcers on the right shoulder, buttocks, and thighs; and a periosteal node on each tibia, ulcerated and exposing bare bone on one leg, unbroken on the other. The ulcers on the scalp were chiefly on the right side. Her memory was extremely defective; and she stated that she had had several "fits" within the last two or three years. She had a fit after having been a short time in the hospital, and, when called to her, the house-surgeon found her comatose, with flushed face, relaxed muscles, and heavy breathing. After this her mind was more or less deranged for several days; she thought other patients had designs against her, was restless, and talked incoherently.

According to her statements, which, however, could not be entirely relied upon, she had had no ulcerations or other eruption until about six months before admission. Fifteen months before admission her right eye was excised at St. Bartholomew's, possibly (from her account) for neglected glaucoma. She had been married fifteen years, and had been pregnant twice; the first ended in a miscarriage, and the second (a boy) died at the age of four months. Catamenia ceased when she was forty years of age. It is probable that her bone and skin disease was much aggravated by destitution, for she was half-starved. She did not bear iodide of potassium well: it salivated her. After a few days' intermission, however, she resumed it, and all the ulcers rapidly healed. Black wash was applied locally.

Syphilis quite latent for thirty to forty years from the primary disease; appearing after that interval as nodes on the cranium, probably induced by a blow on the head.—Antony E——, aged sixty, a robust, healthy-looking farm-labourer, was under Mr. Hutchinson's care in April last for syphilitic caries of the cranium. There were five or six sinuses in the frontal region, all leading to bare bone. Exploratory incisions were made after he had been in the house several weeks, to ascertain whether any of the bone was loose; it was still quite fixed, a surface as large as one's palm being quite bare. The man stated that the sinuses were preceded by the formation of lumps on the head, which enlarged and then broke; these had begun to form about nine months before he came under care, and he attributed them to a blow on the head from a falling wheatsheaf.

He at first denied ever having had venereal disease of any kind, but afterwards remembered that between thirty and forty years before the occurrence of the cranial nodes, he had had a chancre. It was not, so far as he remembered—and he was carefully questioned—followed by secondary symptoms of any kind, nor had he had the slightest reminder of it until the lumps formed on his head. He has brought up a large family without losing any children, and none of them appear to have had symptoms of hereditary syphilis; the children were not seen, however.

This man was seen again three months after his discharge from the hospital, and the dead bone was still quite fixed.

Syphilitic disease of the cranial bones; abscess in the brain; epileptic fits; evacuation of pus; relief.—Oliver H——, aged forty, probably had syphilis eleven years ago. He worked in a mercury mine many years, but gave up this employment nine years ago.

In June, 1871, he was admitted into this hospital with periostitis of the frontal bone, which appeared from the history to have commenced seven years before. When in the hospital there were repeated suppurations of the frontal nodes. In 1870 a piece of bone had been removed. Seven weeks before his admission in 1871 an abscess had formed about the left upper eyelid; this broke, and when the wound had healed there was considerable retraction of the upper lid, so that the eyeball was not covered by the lids. The cornea then inflamed and perforated, notwithstanding all the efforts made to keep it covered. The scalp was riddled with sinuses, leading to large boggy swellings, from which great quantities of fetid pus escaped. On June 28th the lens escaped from the left eyeball, and on the 29th the eyeball was extirpated. At the same time one small and two large pieces of bone were removed from the frontal region, leaving the pulsating dura mater covered only by thin granulations. On July 10th a large abscess formed about the right upper eyelid, and a large piece of bone was removed from its cavity. This continued to discharge pus for some time, but there was no retraction of the lid.

In January, 1872, another piece of bone was removed from the right frontal, and in February another piece of bone was found to be bare, but not loose.

On the 22nd of July he was readmitted with extensive suppuration under the old scar on the right side. Loose bone was felt. The patient also suffered from one-sided convulsions, commencing in the left fingers, and passing up the arm to the face on the left side, and then down to the leg on the same side, the right side not being affected. He complained of great pain at the back of the head, especially at the left side. On manipulation, and on removing the piece of loose bone, a large quantity of fetid pus was seen to come from the right hemisphere, into which the probe could be passed for about four inches. A free escape for the pus was allowed. There was no optic neuritis, nor cardiac disease.

July 23rd.—No more fits; no pain; pus comes away freely.

24th.—No convulsions. There is some loss of power over the left arm; but the pus escapes freely. There is also slight loss of power in the left leg.

25th.—There is slight but decided facial paralysis of the left side.

Aug. 1st.—There is more power in the left arm. There is some exposed bone, which is, however, firmly adherent to the scalp on the right side. On passing a probe into the opening through the dura mater, a quantity of thin fetid pus escapes *per saltum*. The silver probe is at once tarnished by the fluid. A small piece of dead bone was removed from the left parietal bone.

29th.—The abscess seems to have healed. No pus now escapes on probing. The weakness of the left side is less, and the patient is progressing fairly well.

GUY'S HOSPITAL.

STRANGULATED FEMORAL HERNIA; OPERATION; RECOVERY.

(Under the care of Mr. BRYANT.)

H. B——, a delicate-looking woman, aged forty-three, was admitted into the hospital on June 7th, with a strangulated femoral hernia on the right side. A swelling was first noticed about twelve months ago, just below the right groin. The tumour reduced itself whenever the patient lay down. No truss was ever worn. On June 4th the swelling appeared, but could not be returned.

On admission, a femoral hernia forming a tumour an inch

and a half by an inch in extent was present on the right side. There was much constitutional depression, and the patient had vomited frequently during the day. Chloroform having been administered, a vertical incision was made over the swelling, and from this line another incision was made obliquely outwards and downwards through the dusky-red and œdematous skin. The sac being opened, a large quantity of purulent fluid escaped, the bowel, moreover, being covered with large flakes of lymph. The intestine was then returned, and the wound dressed with dry lint, and supported by pads, an opium suppository being at once administered.

June 8th.—Wind passed per rectum. Temperature 98·6°F.; pulse 105. Patient complained of pain in the abdomen. To have nothing but iced milk.

10th.—Pain less. Had a motion during the night. Temperature 99·2°.

11th.—Vomited several times during the night. Pain less. Had another motion in the night. Wound nearly healed. The urine to be drawn off twice a day by a catheter.

12th.—Bowels regular; vomiting ceased; urine passed voluntarily.

22nd.—Patient much improved. To have some fish or fowl.

26th.—Wound not quite healed, but discharges very little pus. To be dressed with dry lint.

July 16th.—No discharge from wound.

27th.—To wear a truss.

Aug. 8th.—Patient much stronger. To leave the hospital in a day or two.

CANCER HOSPITAL.

INDURATED CYSTIC TUMOUR OF THE MAMMARY GLAND FROM NON-EMPLOYMENT DURING LACTATION.

(Under the care of Dr. MARSDEN.)

THE origin of tumours is generally so obscure that a case whose antecedents are tolerably clear is always interesting. The following history shows that the development of the tumour was in all probability due to the disuse of the gland in which it was formed during lengthened periods of lactation with the other gland. We are indebted for the report of the case to Dr. Crombie, house-surgeon.

E. H—— was admitted into the Cancer Hospital with a tumour in the right breast about the size of a small orange, irregular in outline, hard and nodulated on the surface, but without adhesion to the skin or muscle, and without implication of the axillary glands. It is to be remarked that, although the patient was only twenty-four years of age, and in other respects a tolerably healthy-looking woman, her sound breast was a very ill-developed one. The tumour was first observed about ten months ago, after she had discontinued for two months to suckle on that side, owing to soreness of the nipple. She had therefore suckled on both breasts for seven months, and for nineteen months on the affected gland, as she weaned her child only on admission into the hospital. She had followed much the same plan on three previous occasions, discontinuing to use the right breast after a time in consequence of soreness of the nipple, and going on suckling with the other for eighteen or twenty months. She had never observed any tumour in the neglected gland, but it had often felt uneasy, and had always continued to discharge milky fluid from the nipple as long as milk remained in the opposite breast. Iodine paint had been used for the tumour repeatedly, but without any beneficial result, there being a gradual increase in its size and hardness. It did not occasion much pain.

No perceptible effect having been obtained by the treatment employed, Dr. Marsden removed the whole gland on the 24th July.

On examination no trace of gland-structure could be detected, the tumour consisting of a dense solid material surrounding a number of small cysts of various shapes, full of rich yellow cheesy or creamy matter, evidently the inspissated secretion of the gland without any admixture of other materials. The colour of these contents was most marked in the portions next the walls of the cysts, which were more deeply tinted, being of a brownish colour; while the portions furthest removed were nearly white. The solid portion was made up of a hard, greyish, elastic material, without any appearance of structure to the naked eye; and a section examined under the microscope presented the appearance of molecules destitute of any cellular character, arranged in lines of considerable regularity. Although several portions were examined, nothing like a cell could be found. Strong nitric acid had little action when applied on the surface of a section, but hydrochloric acid acted powerfully—the opposite to their behaviour when applied to the skin.

There seems little doubt that the discontinuance of the normal relief of the one gland while lactation was fostered for an undue length of time, in a woman with weak breasts, by the use of its fellow, was the occasion of the stagnation and deposition of the more solid elements of the secretion and the subsequent induration of the gland.

The wound healed slowly, but presented a good healthy cicatrix when the patient left the hospital on Aug. 6th.

LEEDS GENERAL INFIRMARY.

MALIGNANT DISEASE OF THE TONGUE.

(Under the care of Mr. JESSOP.)

THE notes of the two following interesting cases were taken by Mr. Robson. In one the tongue was removed by Chassaignac's method under the chin, in the other by ligatures applied round the base of the tongue after an incision was made in the cheek, from the corner of the mouth to the angle of the jaw on the left side. Both seem to have been successful for a time at least, but it is to be feared that recurrence is about to take place in the case removed by the écraseur submentally.

Epithelioma of tongue; removal of entire organ by Chassaignac's method.—John A——, cart-driver, aged sixty-one, had always enjoyed good health, never having been troubled with rheumatism, sore-throat, ulcers, specific nodes, nor sores on penis. Has always been steady, but has smoked a great deal—five or six ounces of tobacco weekly—generally using a short clay pipe. Two years and a half ago, without any apparent exciting cause, a small hard lump, about the size of a pea, formed on the upper surface of the left half of tongue, midway between the base and apex, and over this he noticed a little white patch. The whiteness soon disappeared, but the small tumour remained, giving no pain up to four months ago, when it began to increase, and continued to do so until May 21st, 1872, at which time it was about the size of a bean. He showed it to a friend, who applied some burning fluid to it, which converted it into an open sore, and caused it to spread very rapidly. He has had it touched with the fluid several times since, each application giving him great pain and causing the surface of the sore to have a white appearance. He then consulted Mr. White of Doncaster, who, recognising the nature of the case, advised its removal, and immediately sent him to Mr. Jessop for that purpose.

The patient was accordingly admitted into the Leeds General Infirmary on the 1st of June, at which time there was an open sore on the left half of the upper surface of the tongue, measuring one inch and three-quarters antero-posteriorly by one inch and a half laterally, and raised three-eighths of an inch above the surface of the mucous membrane. The elevation consisted of small granulations, raised in cauliflower-like excrescences, which had spread to the apex and down the left side of the tongue, but had not encroached much on the right side. It did not give much pain when at rest; but on moving his tongue, as in mastication or deglutition, the pain was great. There was no enlargement of glands nor cachectic appearance, and he seemed to be in good health, having a good appetite, but only being able to take liquid food, on account of the pain he had in mastication.

The following operation was performed on June 6th:—An incision of about an inch was made through the skin and cellular tissue, immediately above and parallel with the upper border of the hyoid bone. Into this a needle—broad, flat, and curved, with an open eye, and having an écraseur wire attached in the form of a loop—was inserted and passed into the floor of the mouth by the side of the frænum linguæ. The loop having been brought through, and the needle released, the wire was passed over the

tongue and kept near the base by means of broad forceps. Chloroform was then given; and when the patient was under its effects, the écraseur was brought into action beneath the chin by giving the handle a complete turn every thirty seconds; after a few turns the interval was lessened to fifteen seconds. The tongue came away ten minutes after the application of the écraseur, without any bleeding, the whole operation, including the administration of chloroform, occupying twenty minutes.

June 7th.—Temperature 99·8° in morning, 100·8° in evening. Pulse 96. There has been no bleeding from wound, which looks quite clean and healthy, and gives a little smarting pain.

8th.—Temperature 99·6° A.M., 97·6° P.M. Pulse 80. No pain. Wound looks quite healthy; appetite poor; excretions normal. He feels so well that he has asked to go home.

10th.—Temperature 97·6° A.M., 98° P.M. Pulse 100. Appetite improving; the root of the tongue looks clean and healthy, and is healing; the wound in the neck has healed, but is rather swollen, and gives a little pain.

15th.—The root of the tongue is healing, gives no pain, and discharges very little. He feels perfectly well, and is going home to-day.

July 1st.—Came to infirmary as an out-patient. Says he is enjoying as good health as ever he had. The wound has healed to a small point, which looks quite healthy. He has no pain, and can masticate and swallow his food without any difficulty. Speech has improved, so that he can now make himself understood.

August 22nd.—Returned to the infirmary on account of a swelling beneath the chin. This appeared a fortnight ago, and has rapidly enlarged. It is now as large as a walnut, and is deeply fixed.

Epithelioma of tongue; removal by ligature.—James S——, aged eighty-one, a discharged soldier, now in ward No. 3, was well until a month ago, when he noticed a hard lump, smaller than a pea, on the left side of his tongue near the base. The lump very rapidly grew larger, and extended in all directions, giving no pain except during mastication and deglutition.

Admitted, under Mr. Jessop, July 28th, 1872, with a hard swelling situated on the left side of the tongue. The induration seems to extend backwards almost to the epiglottis, forwards to within an inch of the tip, and laterally a little short of the median line. The floor of the mouth is not involved, though the tongue is tightly bound to the lower jaw; and there are no enlarged glands to be felt. It gives no pain except during mastication and deglutition, when it hurts him severely; consequently, he can only take liquid or well-divided food. His general health is very good, and he seems to be a hale old man, having always enjoyed good health.

July 7th.—He was put under the influence of chloroform, and the cheek was laid open by an incision extending from the left angle of mouth to angle of jaw. A needle, carrying a doubled piece of thick whipcord, was passed three times through the tongue beyond the margin of the tumour. The loops thus formed being cut through, four separate ligatures were formed, which were tied very tightly, and left to slough away. Previous to this some thinner cord was tried, but was found to be too weak for the purpose. The wound in the cheek was then brought together by sutures.

8th.—Wound in cheek looks well and the edges are in good apposition; tongue is very much swollen, and covered with a brown fur; breath fetid; pulse 114; appetite poor; thirst great.

9th.—Part of wound in cheek healed by first intention, the remainder looks healthy. Tongue very much swollen, but less so than yesterday, and covered with a brownish fur. The wound in the cheek causes a little pain, but tongue none.

11th.—Pulse 104; temperature 101·4°. Tongue less swollen, but gives a little pain. Ordered to have Condy's fluid lotion for mouth.

13th.—Pulse 80, fuller and stronger; wound in cheek almost healed; tongue not much swollen, and covered with a brownish fur; sloughs separating, part has come away this morning. Yesterday his temperature was 102°, to-day it is 100·6°. Breath very unpleasant; bowels confined. Complains of pain below jaw.

17th.—Tongue furred and less swollen. Cheek healed, except at angle of mouth; it gives a little pain, but tongue gives none. Sloughs have come away. Temperature 100° and 101°; appetite poor; bowels confined.

19th.—Tongue less furred and of normal size. Complains of pains below jaw, where there is a fluctuating swelling, extending from just below symphysis to left ear. Temperature 100°.

20th.—Abscess below jaw burst during the night; has less pain now; a quantity of unhealthy-looking pus has come from the opening. Temperature 100°.

From this time he made steady progress, and was discharged well August 17th.

Reviews and Notices of Books.

General Report on the Lunatic Asylums, Vaccination, and Dispensaries in the Bengal Presidency, for the year 1870. With Appendices. Compiled by Assist.-Surg. KENNETH MACLEOD, A.M., M.D., Officiating Secretary to the Inspector-General of Hospitals, Indian Medical Department. Calcutta: Printed at the Bengal Secretariat Press. 1872.

Vires acquirit eundo. This, the third of the series of reports on the lunatic asylums, the vaccination, the hospitals and the dispensaries of the Bengal Presidency, contrasts favourably with the second, and still more so with the first of its predecessors. The same plan has not been observed in all three. While the report for 1868 sketched the rise and development of the above institutions up to the end of that year, the report for 1869 comprised within one volume the outstanding features, sanitary and medical, of the twelvemonth. The present document repeats this method, matters of general interest being handled, under each section, summarily in the first instance, while the items of information concerning the institutions and proceedings in the several provinces are subsequently set forth in minuter detail.

As to the importance of the purpose subserved by the report there cannot be two opinions. Its contents have been drawn from sources, printed or in manuscript, not easily available for medical officers. Of the printed records from which it is compiled, few are distributed universally among the executive sanitary functionaries of the presidency, who would accordingly be left in ignorance of much information required for their guidance but for a well-digested summary of the documents in question. Nor is it only the executive sanitary functionaries who derive benefit from the multifarious items of interest condensed in this report. From its pages the government, whether imperial or local, obtains a clear and connected view of the establishments which it describes; while the comparison of the results arrived at in the several provinces has its useful effect in suggesting improvements and in maintaining a high standard of efficiency. As the reports accumulate, moreover, year by year, they will constitute a convenient library for reference, and embody, we trust, a history of progress, stage by stage, in the great work of sanitary amelioration in India.

Dr. Kenneth Macleod, the compiler of the volume before us, has many qualifications for the task. Scholarly in his mode of expression, his opinions are formed from a wider induction of facts than most sanitary officers have at command. The important section on Lunatic Asylums, for instance, presents all the evidence of a thorough training in medico-psychology—a subject only just beginning to assert its proper place in the medical curriculum. Among other things, Dr. Macleod draws an instructive comparison between the vital statistics of the lunatic asylums in the Bengal Presidency and those in other presidencies and countries. In Indian asylums he demon-

strates that both recovery and death-rates are higher than in similar establishments in the United Kingdom. In India chronic lunatics have not yet accumulated to the same formidable aggregate as in England, though of course there, as indeed all the world over, matters are tending in that direction. Forms of insanity peculiar to India, however, such as those caused by the abuse of hemp, are so susceptible of cure that a diminution in the lunacy returns may be expected. With regard to the particular year described in this report, 1870 contrasts favourably with previous ones. The death-rates in asylums were smaller. This the report attributes in great part to a larger residual or chronic population, and also, in some measure, to the greater salubrity of the year. Notwithstanding this, however, the death-rate in those institutions is still very high. Completing the value of this section are the notes appended by Dr. Macleod as to the efficacy of new remedies in treating the insane—hydrate of chloral, for instance, to say nothing of tonics, well-adjusted regimen, and recreative employment both in and out of doors.

The section on Vaccination will have many attractions at present for the practitioners of the United Kingdom, describing as it does the various systems of conducting vaccination in the different provinces, and exhibiting the results in contrast with those of previous years. In this, as in so many other respects, Bengal owns her inferiority to the sister presidency of Bombay; the work achieved in the former being far short of that done in the latter, both as regards the number and the organisation of functionaries and the results attained. "In all the provinces of the presidency," says the Inspector-General, "though much earnest and thorough effort is being put forth, the out-turn falls very far short of complete protection. Defects and shortcomings are clearly pointed out; and it is satisfactory to note that, in those localities where the most exhaustive work has been done, there has been a marked suppression of small-pox." One cause of this last result is doubtless the feeling of the population with respect to vaccination, which is growing more favourable. Though an entirely satisfactory state of things as regards protection from small-pox is still remote, yet the energy, the progress, and the earnest of improvement apparent everywhere throughout the presidency are of propitious augury.

The third section will have even more interest for the sanitary medical officer of England than its predecessors. It gives an elaborate view, at once detailed and systematic, of the charitable medical relief which, under State direction and at State expense, is vouchsafed to the sick poor. Everywhere in Bengal the number of dispensaries is multiplying in proportion to the vast increase in the number of applicants; and the results, when tabulated, show a great and progressive amount of philanthropic energy dedicated to the relief of sickness. In the words of the Inspector-General, "all the inspecting medical authorities, whether belonging to the imperial or local staff of medical administration, agree in assigning a high value to these institutions; and it is a matter of congratulation to observe that both are more concerned in promoting the progress and prosperity of these excellent institutions than in asserting their own position or authority." This is a most satisfactory state of things. Would it were more general! Though the duties of deputy inspectors-general and of the inspector and superintendents-general of dispensaries might occasionally bring them into collision, still, so little do they seem inspired by jealousy of each other's interference or by the self-asserting spirit, that in practice such collision has seldom or never occurred. In Bengal, as in England, in fact, want of harmony or co-operation need never be looked for so long as all officials are agreed as to the objects which such sanitary institutions are meant to subserve, and as to the most efficacious methods of promoting these objects.

In the present interest attaching to prison discipline, as attested by the International Congress lately held here, the section embodying the medical and sanitary report of the convict settlements at the Andaman and Nicobar Islands, will have many readers. This part of the work has been done by Surgeon W. H. Rean, and (to borrow the Inspector-General's words) "is so complete and instructive, and manifests moreover such brilliant results obtained by the sedulous application of the principles and rules of hygiene, that though it has already been considered by the Government, I have esteemed it of sufficient importance and interest to merit a more extended circulation among medical officers." Besides the value of its information as to the management, the restraint, the employment, the dieting, and the general treatment, medical and sanitary, of the convicts, the report has also the melancholy attraction of presenting a vivid view of the condition, natural and social, of the establishment which it was the late Lord Mayo's last duty to inspect, and in which he fell a victim to the fanatical vindictiveness of the assassin. General readers, as well as professional, will find Surgeon Rean's paper amply reward perusal.

Dr. Macleod's final contribution to the volume is his exhaustive view of the rise and development of medical education in the Bengal Presidency, and the growth of the native subordinate services, which have now reached so high a position as regards both the number and the value of the functions fulfilled by their members. On the preparation of this record much pains have been bestowed, no fact of importance or of interest having been omitted. "The Medical Department," says the Inspector-General, "has throughout, either directly or indirectly, been largely concerned in native medical education, and it is but fitting that this the first complete history of its rise and progress should emanate from the office where the earliest efforts to educate natives in medical science originated, and where only questions affecting the demand for supply of this class of agents and the conditions and requirements affecting both demand and supply can be properly considered." To no hands more competent could the composition of this record be entrusted than to those of Dr. Macleod, whose thorough academic training and enlarged views of education, not only in its professional but social and political aspects, pre-eminently fit him for the work. The delay incurred in the publication of a report for 1870 no earlier than midsummer, 1872, the Inspector-General apologises for, ascribing it to the tardiness with which the reports on which it is based were received. Indeed the last of these documents did not reach the secretariat office till the end of April of the present year. Late as it is, Dr. Macleod's report has been most welcome to us, and we shall continue to look forward to its successors with all the eagerness which a deep sense of the importance of sanitary amelioration in India can stimulate or inspire.

OUR LIBRARY TABLE.

A Treatise on the Diseases of Infancy and Childhood. Second Edition, Enlarged and thoroughly Revised by J. LEWIS SMITH, M.D., Curator of the Nursery and Child's Hospital, New York; Physician to the Infant's Hospital, Ward's Island; Consulting Physician in Children's Diseases, Out-door Department of Bellevue Hospital; Clinical Lecturer on Diseases of Children, and Professor in Bellevue Hospital Medical College, New York. London: Trübner and Co. Philadelphia: C. Lea.—The short time which has elapsed since our notice of the first edition of this book, and the very favourable character of that notice, make it

unnecessary for us to do more than express our pleasure at seeing a second edition with additions which make the work much more nearly complete than it was at first. We pointed out that there were several faults of defect in the first edition. They have been almost removed by the new chapters of this. Nearly twenty additional diseases have been treated of, among which may be mentioned—diseases incidental to birth; rachitis; tuberculosis; scrofula; intermittent, remittent, and typhoid fevers; chorea; and the various forms of paralysis. One of the great excellences of the work is the rich clinical and pathological illustration of disease. The style of the author is clear and practical, and altogether the book is one which practitioners will find very valuable. We must again refer with satisfaction to the treatment of the subject of diarrhœal and other intestinal diseases in children.

The Canada Medical Record. A Monthly Journal of Medicine and Surgery. Vol. I. No. 1. Montreal. 1872.—This new venture in medical journalism is a sort of secession from the *Canada Medical Journal*, owing to some differences existing amongst the editorial staff of the latter. The editor, in his inaugural article, says that his "platform pure and simple will be elevation of the standard of professional education, fair play to the profession in all public appointments, and opposition to monopolies which unfortunately exist in the professional, as well as in the mercantile world." The price is fixed at the rate of two dollars a year, in return for which readers are promised "a live journal well up to the times, and thoroughly independent in its character." "Brave 'ords," and we hope the result will fully justify the expectations of the promoters of the *Record*.

A Manual for Hospital Nurses and others engaged in Attending on the Sick. By EDWARD J. DOMVILLE, L.R.C.P. Lond., M.R.C.S. Eng. London: J. and A. Churchill, New Burlington-street. 1872.—This is a cheap and useful little book, containing a considerable amount of information likely to be required by hospital and other nurses or attendants on the sick. Besides some practical advice for the guidance of the nurse as regards her duties to herself, her superiors, fellow-nurses, and patients, there are a good many excellent hints about the management of ordinary and special cases of disease and injury, the preparation of remedies, and the internal administration and minor sanitary details of a sick ward.

The Monthly Microscopical Journal. No. XLV. September. Edited by HENRY LAWSON. Robert Hardwicke. — This number contains:—1. A paper on Euchlanis triquetra and E. dilatata, by C. T. Hudson (giving an account of their anatomy). 2. On some Methods of Preparing the Tissues of the Frog, by R. L. Maddox. 3. On the Employment of Coloured Glass in Microscopy, by M. Mouchet. 4. Note on Siliceous Incrustations from the Yellowstone Geysers, by Prof. Mead Edwards. 5. On Angular Aperture of Immersion Objectives, by R. B. Tolles. 6. The Minute Anatomy of two cases of Cancer, by Dr. Woodward. 7. The Theories of Cell-development, by J. N. Danforth. 8. Drawtubes *versus* deep Eyepieces, by M. A. Prazmowski.

The Ancient Stone Implements, Weapons, and Ornaments of Great Britain. By JOHN EVANS, F.R.S., F.S.A., Honorary Secretary of the Geological and Numismatic Societies of London, &c. 8vo, pp. 640. Longmans and Co.—Author and publishers may be alike congratulated on this volume. The author has done his work with a conscientious and masterly elaboration in the highest degree praiseworthy, and the publishers have seconded the author's efforts by peculiar excellence in the typography of the volume and the execution of the engravings. Too rarely, indeed, do we see the illustrations of scientific works in this country so admirably executed as the illustrations to this work have been. The subject of the volume is not one which admits of a detailed criticism in these pages. It may be stated generally that Mr. Evans's work will be the text-book of the archæological student on the subject of which it treats. Not the least creditable part of Mr. Evans's work are the synopses of contents and illustrations, and the excellent general and geographical and topographical indices.

The Educational Gazette. A Monthly Journal of Educational Movements and Events. No. 14. Edinburgh: Printed for the Proprietors.—Education, in theory or practice, as a professional or as a social question, absorbs more attention in Scotland than in England and Ireland put together. In proof of this we have but to point to the space which the subject absorbs, not only in the daily and weekly press, but in organs specially devoted to it. The *Educational Gazette* is the latest addition to the latter order of journals. If we may judge from the specimen before us, it is edited with ability, both as to the selection of topics and the style of expression. An excellent review of Mr. Anderson's book entitled "Children Rescued from Pauperism," suggests to us how effective an auxiliary such organs as the *Educational Gazette* might prove to sanitary reform by enforcing the paramount claims of hygiene, moral as well as physical, on the attention of schoolmasters.

THE DRAINAGE OF WINDSOR CASTLE.

MOST of our readers are probably aware of the fact that Her Majesty has arranged a prolonged absence from Windsor Castle, and that Frogmore Lodge has been vacated by the Prince and Princess Christian, in order that the entire system of drainage connected with the Castle and Royal buildings adjacent may undergo a complete reorganisation. Deeply impressed with the importance of the subject, we sought for and obtained a polite permission from the authorities of the Royal Household to inspect the works now in progress. It will be seen that these works are of a very important and radical character, and are of course the result of long and careful consideration.

It is now twenty-five years since both the Castle and town of Windsor sent all their sewage into what was called the Windsor Crown sewer, which was no less than seven feet and a half high and four feet wide, and discharged its contents into the Thames near what is now called the Albert Bridge. The extremes in height from the lowest to the highest level were no less than ten feet; and the sewer received also the rainfall, subsoil and upland drainage, overflow of lakes, and in fact everything. The evils of this arrangement are of course sufficiently apparent, and need not be particularised. But some fourteen years ago it was determined to divert the Castle sewage from the town, and in consequence a large main was constructed, which took and still takes the sewage and rainfall from the Castle and Royal stables; it starts finally from the south-east corner of the latter buildings, and, proceeding in a direction nearly parallel with the town sewer, empties its contents into the river some few yards above it. This plan, so far as the Castle was concerned, may have worked tolerably well when the river was low; but, when floods occurred, the foul water was always held back, and overflowed by the man-holes into the Park, and also, inasmuch as a large number of Royal buildings, including Frogmore Lodge and several other important establishments, still drained into the town sewer, the result has been unsatisfactory from an administrative as well as from a sanitary point of view. The climax was reached when the Thames Navigation Act of 1866 became law, and the Conservators gave notice to the city of Oxford

and the towns of Eton, Windsor, and Abingdon, to divert their sewage from the river. It then became a superlative necessity that those entrusted with the care of the Royal establishments should lead the way in compliance with the law, and not wait for action on the part of the town; and no scheme could be considered as complete which did not include Frogmore and the adjacent buildings. The special plan of drainage had then to be settled, and no less than five years have been spent in its consideration and elaboration.

People conversant with sanitary questions are familiar with an official report by Colonel Ewart, R.E., published in 1868, "On the proper Principle of Drainage to be adopted in the towns of Oxford, Eton, Windsor, and Abingdon." This report, after referring to the Thames Navigation Act above quoted, proceeds to recapitulate severally the advantages of the "separate" and "mixed" systems of sewerage. As the character of this article is descriptive, and not controversial, it will suffice to say that the "separate" system has been finally determined upon, the exact principle and advantages of which were, we believe, first enunciated by Mr. William Menzies, deputy surveyor of Windsor Forest and Parks, in a treatise "On Sanitary Management and Utilisation of Sewage," published in 1865. He was led to a conclusive opinion on the matter from considerations induced when investigating the great difficulties of the Windsor drainage, the outfall of which had been under his charge for many years. We may state briefly, for the benefit of those unacquainted with the subject, that the "separate" system consists in keeping the rainfall entirely distinct from the sewage, and in conducting each to its destination by separate tubes or drains of comparatively small calibre. The *rationale* of the plan can be best appreciated if we give a simple description of its application in the present instance, starting at the source and ending at the outfall.

An important feature in the success of the scheme proposed is the existence of a large well on Romney Island, 500 yards below the town, which has for the last forty or fifty years afforded the Castle an abundant supply of good water both for drinking and general purposes; so that no difficulty can exist on the score of flushing, and the quantity required each day is of course a mere matter of calculation in relation to the number of the inhabitants. A uniform quantity of water is, indeed, used for flushing; for every morning at a fixed hour, and at a given signal, 50,000 gallons of water are sent through all the pipes in the building. All the closets in the Castle are built against outer walls, and are all carefully constructed on the ordinary plan. An essential principle of the separate and all good systems involves, of course, the entire closure of all rain-water pipes as ventilators; because these no longer communicate with the foul sewers, but with the rain-water drains. This plan had, indeed, been effected some years ago, by trapping these pipes at the foot, except on the South Terrace, where, as for special reasons it was not necessary, the rain-water pipe has been retained as a ventilator, by the introduction of a curved pipe. Numerous and special ventilating shafts exist in all parts of the building, and, though inconspicuous, may be discovered here, there, and everywhere. The main system of the foul drainage of the Castle is admirably constructed and arranged, and remains almost untouched. It crosses the centre of the quadrangle at right angles, and runs in a straight line under the gateway and the drive to the entrance of the Long Walk, accompanied by the existing rainfall pipe. All the buildings on the west and south-west sides of the great tower, including those around St. George's Chapel, the residences of the military knights and canons, with the houses adjacent, drain into a 15-inch pipe, which is conducted under the road in front of St. George's Chapel, and, crossing the main road, is taken up by a pipe of the same diameter, which drains the stables and other offices; and, at the south-east angle of the latter, joins the main drain at the end of the Long Walk.

The remaining arrangements are very simple: the pipes on the east terrace are to carry off any overflow from the fountains; and those on the north terrace are entirely distinct from the rest, as they take up the water from the surface-gratings, and scatter it and that collected from above out of various exits over the slopes. All the rainfall collected from the rest of the Castle is taken by a pipe and culvert to the Windsor town sewer, which is the property of the Crown, and will ultimately become a passage for rain-water alone to the river.

We have now to follow the main sewage drain to the outfall, and may dismiss the rainfall system entirely, inasmuch as the simple principle is everywhere adopted of scattering the water here and there as opportunity offers, except in the case of Frogmore, where a large tank is being constructed for domestic purposes. The main drain, having reached the Long Walk gate, turns off, at an angle of about 50 degrees, into the Castle main sewer, which is thus utilised for about 500 yards of its length. The Castle sewer is then discarded, and an 18-inch pipe is taken from it in a south-westerly direction, at a level low enough to include and pick up, by means of branch pipes, the drainage of Adelaide Lodge, the kennels, Frogmore Lodge and its adjacent buildings, and the dairy farm. Frogmore is of course the most important of these establishments, and here we find the utmost care taken as to the construction of closets, ventilating pipes, &c. Near the new Datchet road another junction occurs, which brings in the drainage from Shaw Farm and the Royal gardens. And here the "feeders" end. The pipe runs a short distance parallel with the river, and then for an equal distance parallel with a short cut that connects the extremities of a bend in the stream, and will ultimately discharge its contents (about two miles from the Castle) into a 20,000-gallon receiving-tank furnished with a strainer, sunk near the bank of the cut. The gradients for the greater part of its course are from three to four feet in a mile; and ventilating and inspecting shafts will be provided along the whole line.

We have now reached the point of outfall, and have to deal only with the ultimate disposition and utilisation of the sewage. It is arranged that the solid material remaining on the upper surface of the strainer shall be raked out from time to time by manual labour, mixed with ashes and probably some disinfectant, and carted away to the farm. The fluid sewage will be pumped up from the reservoir, and sent across the branch of the river above mentioned to the farm in large iron pipes; and the machinery for pumping is to be very ingeniously set, and kept, in motion by the utilisation of some of the power of a large turbine wheel employed for another purpose some hundred yards off, compressed air being the agent used in the process for transmitting the power. The advisability of deodorising the sewage, fluid and solid, in the tank and the reservoir, or on the farm, and the best agent for effecting it, are matters still under consideration.

The farm is fifteen acres only in extent, and occupies a tongue of land, bounded by the Thames on the north, and the short cut above mentioned on the south and west, and is already embanked for purposes of irrigation, though not yet levelled.

We have endeavoured to describe as simply as possible the details of a sanitary operation, the absolute, relative, and diplomatic importance of which (following immediately upon the birth of the first Public Health Act) can hardly be exaggerated. The system has been planned and the work is being superintended by Mr. William Menzies, and Captain Gunn, of the Royal Engineers, whose services have been given by the War Office. It is a great pleasure to tender cordial acknowledgments to Mr. Menzies, as well as to Mr. Ripley and Mr. Simmonds, his assistants, who accompanied us through the grounds, and most courteously afforded us all possible information.

CONDENSED MILK.

WHEN the Teuton fangs had loosened their grip on Paris, and provisions were allowed to pass in, probably one of the most acceptable articles of diet to the half-famished Parisians was *lait conservé*, which English charity poured in at a rate that startled the inhabitants into a feeling of surprise and even of gratitude; for some of their journals, with charming reciprocity, promised that, when London is besieged and shall have capitulated, they will immediately forward us a colossal box of *lait conservé*. Although we do not apprehend any immediate prospect of claiming this debt of obligation, it is consoling to think that when such armoury as "silver streaks" shall have been relegated to the traditions of the past, and the pride of the empire shall have fallen,

we shall not lack for condensed milk. Although condensed milk has been a recognised dietetic agent in America for the last twenty odd years, and has attained considerable popularity there, it is only within the last few years that it has been introduced to the British public. Of course it can never supersede good milk fresh and direct from the cow; but when that is not available, condensed milk is meant to supply its place, and seems already to have overcome a considerable amount of prejudice that was entertained against it.

The siege of Paris proved undoubtedly a great stimulus to the particular industry now indicated, and to which considerable attention has lately been drawn by reason of a paper which Dr. E. Smith, F.R.S., read at Brighton before the meeting of the British Association for the Advancement of Science. Dr. Smith, in round terms, charged the milk condensing companies with skimming their milk previous to condensing it, in order to manufacture butter. The managers of the two great condensing companies, the English Company and the Swiss Company, immediately took up the cudgels, and—"cheer on the pack, the quarry stands at bay"—indignantly denied, in the columns of the press, the truth of Dr. Smith's statement as far as their respective companies were concerned, and it was evident that they were in a position to rebut the allegation of "skimming."

At the request of the English Condensed Milk Company, we paid a visit to their manufactory at Aylesbury, and inspected the various processes used in condensing milk. Premising that we had previously tested several samples of their condensed milk in tins, and put some portion of it to an exhaustive analysis with excellent results, we watched the whole process of its manufacture, from the time the milk was delivered by the farmers' carts until it was put into tins ready for use, and have no hesitation in saying that the Company is entirely free from the imputation advanced by Dr. Smith, who, although misled on the present question, has done good service in ventilating an important subject. The milk is taken in early in the morning, and again in the evening, and immediately upon its reception the process commences. The daily amount of milk used at the present time varies from 3000 to 4000 gallons. On the morning of our visit about 2000 gallons were received, all of it being of good quality and rich. The milk, as soon as it is taken from the cows, is put into cans, immediately placed in cold water, and is then occasionally stirred until it gets cooled. The cans are then left in the water until the time when they are taken to the manufactory. The morning and evening's milk are never mixed. The milk is frequently tested on delivery by the company's men, and, if of inferior quality, is rejected; and the premises of contractors who supply the milk are occasionally visited, and all the utensils used examined.

We were greatly struck with the rigid and minute cleanliness with which the preliminary part of the business was carried out. Each can of milk, after being emptied of its contents, was immediately washed out with hot water and steamed, so that no particle of milk should be present when the next quantity was put in for delivery in the evening. From a few tins purchased in the town we got a very fair supply of cream, and also witnessed the production, by means of a small atmospheric churn, of butter from the contents of two or three tins; although it should be remembered that the great heat and disturbance it had previously undergone in being condensed, together with the amount of sugar present, would render the extraction of butter very difficult.

The sugar used in the process was white, and appeared of good quality, the amount introduced being limited to the minimum compatible with the preservation of the product for an indefinite period.

The company employ about 200 hands, all resident in the neighbourhood, and it would require a marvellous amount of dexterity to pursue any process of adulteration without it being known in the town. We believe we are right in stating that a large quantity of the product is used in Aylesbury in preference to milk direct from the cow, which would furnish strong presumptive grounds of its purity and cheapness. An easy test of the presence of cream in condensed milk, that anyone may apply, is to empty a tin out, and, after adding about three times its quantity of water, to let it stand overnight in shallow flat saucers; in the morning the cream will have been thrown up. Of course it is impossible to get all the cream out by this method. The following are the results of an analysis of the contents of a tin supplied by the English Condensed Milk Company:

Moisture	25·10
Fat	11·73
Casein	15·17
Milk sugar	16·24
Cane sugar	29·46
Ash	2·30—100

This analysis shows the milk from which the extract was obtained to have been decidedly superior to the average milk sold in large towns. Conserved milk seems well adapted for infants' food. The principal difference between woman's milk and that of the cow is that, while the latter contains more casein, chlorides, and phosphates, it contains less butter and saccharine matter. Obviously the addition of sugar, as in the condensing process, would in a slight degree assimilate the product to woman's milk; and we will here throw out the suggestion that the artificial extraction of casein would still more approximate the two secretions, if that were the desired end. The late Dr. Pereira considered that it was possible, by an arbitrary regulation of dietary, to so modify the milk of a female as to produce any required excess of one element. *Pari passu* there is no reason why cows should not be educated to a liking for food which in time should produce highly nutritive lacteal elements even surpassing the milk of the ewe without its indigestibility, and give an amount of casein that would compare favourably with the fibrin of a good rump-steak. We ought to mention, before leaving the subject, that a tin of condensed milk prepared by the Anglo-Swiss Company, which we examined roughly, yielded a fair supply of butter-globules.

MR. J. NETTEN RADCLIFFE'S REPORT ON BRADFORD.

BRADFORD is the principal centre of the worsted manufacture of the kingdom, and has a population of 145,827. In consequence of the large mortality from fever and from diarrhœa in 1870, Mr. Radcliffe was directed by the Lords of Her Majesty's Privy Council to inquire into this high mortality, and generally into the sanitary administration of the borough. Mr. Radcliffe inspected the borough in May, 1871, and again in May, 1872. And his Report, founded on these two inspections, is now before us. It should be read by all sanitarians, and laid to heart by the sanitary authorities of Bradford. Mr. Radcliffe has the two great virtues as an inspector of being able clearly to perceive and describe the sanitary evils of a town, and at the same time to recognise all that is good in the disposition or the doings of sanitary authorities, and all that serves to excuse them for not doing better.

The specific duty assigned to Mr. Radcliffe was to point out reasons for the high mortality at Bradford in 1870 from fever and diarrhœal disease. The mortality from fever was at the rate of 14 in 10,000 of the population. It is thus particularised in the quarterly returns of the Registrar-General:—Deaths from typhus, 33; from enteric fever, 100; from simple fever, 68. Enteric fever is the endemic fever of Bradford. Typhus and relapsing fever were introduced by tramps respectively in 1864 and 1869. Mr. Radcliffe points out how such imported diseases got a considerable hold of the population before any action was taken by the corporation, in consequence of the absence of a medical officer of health or other means whereby a sanitary authority can get the earliest information and the best advice as to procedure. Diarrhœa and cholera-like fever

were more than usually fatal in 1870. Of the decennial period, 1861–71, in one year only—viz., 1865—did the mortality from these diseases exceed that of 1870. In 1865 the mortality from diarrhœa was 21 per 10,000; in 1868 and in 1870 it was 20 per 10,000. Of the total deaths from diarrhœa and cholera during the ten years 1861–70 (1795) 63 per cent. occurred among children under one year of age (41·1 per cent. among infants under six months of age; 22 per cent. among infants six months old, and under one year); 19·6 per cent. among children one year of age, and under five years; and 15 per cent. at five years and upwards. The mortality from diarrhœa and cholera among children under one year of age was 11·9 per cent. of the total mortality from all causes.

Perhaps Mr. Radcliffe does not quite show why the mortality in certain years was greater than in other years of the decennial period; but when we read his account of the system for removing excrement in Bradford, we can only wonder that the diarrhœal mortality is not greater still. It should indeed be described as a system for retaining all excremental poisons in the close neighbourhood of the houses. In 1866 there were from 12,000 to 14,000 privies in the borough, and not more than 1500 water-closets. These privies are emptied, on an average, two or three times in a year. The illustrations of the mode of excrement disposal from Mr. Radcliffe's note-book are very graphic. We can only give one or two specimens:—

"The Leys (Westgate), a small blind court on west of entrance. End blocked up by a filthy privy, and with an open middenstead occupying the entire width of the court, and situated immediately beneath a window of one cottage, and close to the door of another. ..... 3. Keighley-street: The privies of three houses in this street have to be emptied through the house. Nos. 10 and 11 have a small shut-in yard in rear, common to both houses, and measuring 28 ft. by 7 ft. In this yard is an open middenstead, with which two privies communicate, and which measures 9 ft. in length by 4½ ft. in depth, and probably has a depth of 6 ft. from the doorsill. The middenstead was filled with refuse to the sill of the door, and it had not been emptied, so far as I could make out, for eighteen months, probably for two years. Paving of yard was broken, and the ground beneath was sodden with filth; stench considerable. When the middenstead is emptied, the landlord allows the tenant through whose house the filth is carried 1s. 6d. for cleansing yard and floor."

This is the great evil with which Bradford sanitary authorities have to deal. The drainage of the older parts of the town is very imperfect, but a system of main drainage has recently been completed, and will enable the corporation to remedy defects. But this filthy privy system is a much more serious evil. Mr. Radcliffe recommends the cleansing of privies weekly, or at most monthly, and corresponding alterations in their construction, such as the conversion of privies into tub closets, as in Rochdale, or the kind of midden closet adopted in Hull; all this pending the adoption of waterclosets or some other mode of quick removal. The water-supply is not bad, though it needs to be increased. No wonder that the infantile mortality of Bradford registration district is the largest of any in Yorkshire, nor that 25 per cent. of the children under one year died in 1871, nor that the mortality from all causes is greater for the last decennial period than for the period before. The population has increased in thirty years from 66,715 (1841) to 145,827 (1871). This rapid increase of population, accompanied by no corresponding improvement in house accommodation, and a growing demand for the labour of women, implying increased maternal inattention to young children, is explanation enough of an increased mortality, despite the fact "that the Bradford corporation holds a most honourable position for its efforts to ameliorate the sanitary condition of the population." Mr. Radcliffe's suggestions will doubtless receive attention. But no time should be lost in appointing a medical health officer who may constantly keep the corporation informed as to those evils depicted so vividly, and yet in such a spirit of justice to the authorities, in this admirable report.

We do not know that the *savans* of the British Association take much notice of such vulgar matters as those treated of in the report, but it would be a satisfactory thing for them to learn that the causes of disease alluded to will be dealt with before their meeting of 1873.

Foreign Gleanings.

CASE OF SUDDEN OBLITERATION OF THE CENTRAL ARTERY OF THE RETINA.

IN one of the recent numbers of the *Archives de Phys.* Dr. Sichel records a very interesting case of the above lesion. The patient, aged fifty-four, had been suffering for a long time from insufficient action of the auriculo-ventricular valves, when, after a sharp attack, she became completely blind in the right eye. Examination with the ophthalmoscope showed various small hæmorrhagic spots scattered over the fundus of the right eye, and a large hæmorrhagic patch in the left. The right, which at first did not permit the patient to distinguish light from darkness, improved after a few days, and then again got worse. Examination of the eye at various intervals showed a commencing atrophy of the optic nerve, and then the conversion of the artery into a whitish and opaque cord. Eighteen months after the outset of the disease the patient died; and Dr. Sichel, on examining the eye, observed an obliteration of the central artery of the retina by a clot which entirely filled up the calibre of the bloodvessel, which he believed was embolism due to disease of the mitral valve.

PARALYSIS OF VARIOUS ORGANS, DUE TO DISEASE OF THE HEART.

At the last meeting of the Société Biologique de Paris, Mr. Joffroy, house-surgeon to La Pitié, presented a patient suffering from paralysis of various organs, due to disease of the heart. The patient's history is briefly this:—He is seventeen years old. In March, this year, he suddenly lost the sight of one eye; and a few days after he showed confusion of mind, difficulty of mastication, and almost complete hemiplegia. He was then taken to the hospital, and the following lesions were observed: complete paralysis of the lower part of the face; tightness of the jaws; almost complete immobility of the tongue, whence the difficulty of mastication, deglutition, and the articulation of words. The eye was affected with amblyopia, and on being examined with the microscope was seen to present considerable anæmia of the retina. Hemiplegia was very marked in the limbs. On examining the heart an intense bruit de souffle, during the first sound, was discovered. This bruit disappeared and came according to the various attitudes which the patient was made to assume. Pulse and respiration normal. The various symptoms increased in intensity, and it was quite impossible for the patient to take food. Finally, by means of the œsophageal sound, food of various sorts was introduced into the stomach. The patient has since that time gained strength, and the symptoms have amended; contraction of the buccal muscles can be excited; deglutition is now possible; the tongue, however, is still immobile, flat, and smooth, and suggests the idea of atrophy.

M. Joffroy thus explains the causation of the various symptoms just described. In the situation of the left auriculo-ventricular orifice there is a floating polypous production giving rise to the variable bruit de souffle; embolisms thrown into various parts of the brain; through the vertebral arteries into the region which commands the movements of the mouth, tongue, and pharynx; through the arteries of the brain into the hemisphere opposite to the hemiplegic side; through the ophthalmic into the retina.

NEW RESEARCHES ON THE PROPERTIES OF ABSINTHE.

M. Magnan, of Paris, is continuing his researches on the composition and properties of absinthe, and has just communicated his latest results to one of the medical societies of that city. By means of successive distillations he has been able to isolate various products: (1) a blue oil; (2) a yellowish oil; (3) an oxygenated product. There was besides a yellowish residue left in the glass. These various substances were tried on animals: ten grammes of the yellow sediment given to a small dog produced no effect. Thirty centigrammes (five grains) of the blue oil produced from eight to ten epileptiform attacks. The oxygenated product proved, however, the most powerful toxic agent. Fifteen centigrammes of it injected into the veins of a large dog caused the most violent epileptic attacks, which followed in rapid succession, and ended in death. There was an extraordinary rise of temperature from 39° centigrade to 42°. The post-mortem showed various apoplectic centres.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 7, 1872.

WE have but few comments to make upon the summary of the Public Health Act, which appears in another part of these columns, because its salient points have already been canvassed many times before; and we have but to reiterate the opinion that, if worked honestly, liberally, and precisely by central, urban, rural, and port authorities, it should, though but a provisional measure, benefit considerably the health of the people, both in town and country. But it is necessary to watch most narrowly the proceedings of the Local Government Board in the working of the Act, and to see how far the fair promises of Mr. STANSFELD (made when forcing on the Bill in the House amid considerable opposition) are likely to be realised. We were perfectly aware, of course, that, if the Act is to be properly worked, a large increase must be made in the central inspectorial staff of the Board. Many questions will arise, particularly in the rural districts, as to the details of which the rural authorities and their future officers will be entirely ignorant. And it is absolutely and imperatively necessary that a helping hand should be given at the outset to the medical staff, so that they may not only be aided to a quick and correct appreciation of the powers indicated by the Act, but be enabled to apply those powers effectively, and at the same time with as little "clashing" as possible, due regard being had to the interests of all concerned. It is therefore a matter of intense surprise to hear that no less than ten (or more) lay or legal inspectors have, during the past few days, been added to the staff at Whitehall, with the avowed object, as we are informed, of instructing the urban and rural authorities in their duties under the new Act—viz., general directions being given as to their conduct with respect to the future medical officers of health. We can hardly conceive a more suicidal policy, if, indeed, as we are bound to conclude, the lay or legal is to predominate very considerably over the medical inspectorial element, as far as concerns the central office. It has been often remarked, and to a certain extent cannot be gainsaid, that medical officers are not as a class specially astute in appreciating or observing the legal and technical bearings of a question, whether contained in an Act of Parliament or otherwise. But can it for an instant be conceived or maintained that any other than medical inspectors can properly instruct or supervise the future urban or rural officers of health? Is Mr. STANSFELD prepared to declare that his present and newly-appointed lay inspectors are familiar with the laws of sanitary science as at present understood, with the circumstances that influence the causation and prevention of zymotic diseases, and with the best means of combating those diseases when they have found a footing in any district? If not, he is incurring a grave responsibility in thus inaugurating the working of this Act; for the medical and sanitary, unlike the legal aspects of it, cannot be learnt, much less taught, in a day. If all the scientific work that has been so carefully and industriously elaborated in the Medical Department of the Privy Council during past years is not now to be practically utilised for the benefit of the country, Sanitary Commissions may sit and Public Health Acts may be passed, but with small profit to the public, who will have to pay, either out of local or imperial funds, for the privilege of being inspected, whatever the nature of that inspection may be. We await with interest the appearance of some official memoranda relative to the duties of medical officers appointed under the new Act, and cannot but believe that the President of the Local Government Board will see the wisdom, and indeed the necessity, of increasing the medical element in the central inspectorial staff.

IT is well sometimes to take stock of medical work and note the drift of medical doctrine. It may seem to some reverent minds that there is no such thing left as medical doctrine; that each man is his own teacher and does what is best in his own eyes. And, no doubt, of late years there has been a good deal of iconoclasm. There has been much change of opinion and practice. Men have not gone to their old books with so much frequency or so much faith as they were wont to do. And yet an observant critic of the profession will be more struck with the conservatism of practice than with the changes of it. Extreme fashions of practice are altered, even as regards the bulk of the profession; but even in regard to these the great old principles are still accepted. Elimination, evacuation, counter-irritation, action on the liver by mercury, and even the antiphlogistic use of mercury, are ideas upon which the details of much medical practice are based. The professional mind is essentially conservative. It cannot readily disregard the past. It is not our intention to condemn this feature of the professional mind, but rather to recognise and rely upon it, in indicating a few of the points of recent medicine which seem most to distinguish it from the medicine of thirty or forty years ago. There is much that is vague and crude, of course, in the suggestions of modern medicine. But it is not the less to be respected because it is modest and slow to formulate binding rules of practice, and because it has worked largely in attempts to prove many errors of the older system of therapeutics.

Among the features of recent medicine is a disposition to take a very different view of pyrexia from that which our forefathers took. We have so often lately insisted on the significance of pyrexia and on the treatment of it that we need not go into the subject at any length. By the way we may say, that no medical man now should be without a clinical thermometer, which enables him accurately to guage the degree of pyrexia. We shall only repeat here that the febrile state involves a large destruction of the nitrogen-containing tissues, which are hardly consumed at all in health. Every degree of fever heat, or of heat above 98·4°, implies so much additional destruction of the most important organs of the body, such as the heart and muscles and nerve-centres, as well as a corresponding addition to the work of the excreting organs. Such temperatures therefore imply, not strength, but a tendency to exhaustion,

which is to be met by the introduction of food in such forms as can be appropriated. The elevation of temperature in itself may become a cause of rapid or almost sudden death, or, short of this, of great distress and of danger to the patient. Our own pages have contained some striking illustrations of the use of cold as a remedial agent in certain cases of rheumatic fever, typhoid, &c. We need not stay to contrast the present treatment with the older treatment of states of pyrexia, whether connected with local inflammation or with some general disease of the system like rheumatic or typhoid fevers.

Another change of a very practical kind in medicine has reference to the nature and causes of *lithiasis* as a persistent condition. This, again, depends very much on changes in physiological teaching as to the formation of urea. Lithiasis we all know to be a symptom of frequent occurrence. We speak of the conditions of the system in which, without much pyrexia, there is a tendency to red deposits in the urine, with more or less loss of appetite and proneness to gouty or rheumatic affections of the joints. The older notions of this condition tended to inculpate the renal organs. According to our present views, physiological and pathological, the liver is the organ more to be blamed, inasmuch as it seems largely or principally concerned in the formation of urea, from materials supplied to it either by the disintegrating tissues of the body, particularly muscles and nerves, or by excess of certain kinds of food. The liver which has been so much used and abused in medical practice, was rarely made responsible for the production of lithiasis. And yet there is little doubt, as CYON and other physiologists have shown, that it is in the liver that urea is formed. Sir HENRY THOMPSON has ably applied this doctrine to surgical purposes; and, indeed, one of the best medical expositions of the causes and cure of lithiasis will be found in Sir HENRY'S lecture published in our own pages in January last. His views as to implication of the liver in such disorders are consistent with the most recent physiology, and his instructions as to diet and medicines are worthy of the best informed physician. Sir HENRY tells us, as a good justification of his treatment of the subject, that nineteen out of twenty calculi have uric acid for a nucleus. But it is not every surgeon that would think himself called on to go minutely into the most recent physiology and therapeutics of lithiasis. Sir HENRY'S views as to the non-use of mercury and of most alcoholic drinks other than Bordeaux or Rhine wines are especially worthy of note, as those of a practical surgeon.

It has been charged against recent medicine that, while very much like a department of physiology, it takes little interest in therapeutics, and especially little in the use and action of drugs. But the charge will break down when minutely investigated. Doubtless many fancies as to the therapeutical uses of drugs have been rudely demolished. This, however, is only a less valuable service than the demonstration of the real powers and properties of drugs. It is no slight advantage to know that mercury will not cure pericarditis or pneumonia. And there is a growingly large number of facts as to the wonderful powers, physiological or therapeutical, of medicines; and the accuracy with which they have been observed and recorded is no mean note of the medicine of the present day. The illustrations of the action of digitalis in toning the heart; of the action of the bromide of potassium in controlling the epileptic tendency; of the value of opium or morphia in inflammations—as of the eye, the stomach, or intestine; of the antipyrexial powers of quinine; of the value of mineral acids in various conditions and diseases of the system, and the use of mineral waters in others; and the way in which new and striking therapeutical effects have been got by pushing the administration of drugs, such as iodide of potassium and quinine,—are a few of the facts which show that faith in medicines has a sounder basis than it ever had. On the whole, if there is more faith in nature than there was, and a greater fear of thwarting any of the good tendencies of natural processes, there is also a more intelligent appreciation of the degree and way in which nature can be assisted.

THE meeting of the British Association at Brighton may be taken to furnish a noteworthy example of the prominence of the medical profession of this country in all matters that are calculated either actively to promote the veritable progress of science or to promote the diffusion of a general knowledge of the results of scientific inquiry among all classes of the community. The Association has always fulfilled both these functions, and especially the latter, in a way that entitles its governing body and its active members to the gratitude of the public. It need hardly be said that the more wealthy inhabitants of the towns in which the successive annual meetings are held are usually eager to become personally acquainted with the great luminaries of the scientific world; and this eagerness leads them to attend meetings, to hear lectures, to ask for explanations of difficult points in the freedom of social gatherings, and must often cast into their minds seeds that cannot fail to germinate and fructify with advantage. Nor are the less wealthy deprived of their portion of the general good. It has become a settled custom to admit delegates from working men's, naturalists', and other like societies, to the meetings, and also to deliver at least one lecture to working men, for admission to which the subscription to the Association is not required. Dr. CARPENTER'S lecture on chalk, at Brighton, was of this class, and few indeed of the crowded assembly who listened to it can have gone away without carrying with them much food for reflection. It is easy to say that a labouring man, or, for the matter of that, a frivolous idler, is not really better for having taken in some scrap of scientific truth, which he has probably neither capacity nor opportunity to pursue even to its first and nearest consequence. We do not assent to this doctrine, for we think that every scrap of such truth that is really apprehended must have some, however small, beneficial action upon the mind, and we incline to the belief that, even if it seems to be quite dormant in the individual, it may yet quicken and improve the mental faculties of his offspring, and may in this way contribute to the general and progressive elevation of the race. Dr. CARPENTER well pointed out that a BIDDER could not have been born among savages ignorant of number, nor a MOZART among savages ignorant of music; and we may surely hope that every

mental effort, however humble in itself, however small a drop in the ocean of human thought, may yet help to swell the force with which the waves of that ocean assail, and one by one sweep away, the impediments which ignorance and superstition have placed in the way of the advancement of mankind.

In this work, then, it is surely a good thing to share; and it is one in which, as we have said, the members of our profession, always prominent, have this year been unusually conspicuous. The President, Dr. CARPENTER, has long ceased to be a practitioner; but by his books and his oral teaching he has trained many practitioners who will never cease to hold him in esteem; and his position at the London University allows him to influence, more perhaps than any other single man, the course and tendencies of the highest class of medical education. Professor DUNCAN, whose admirable lecture on the Metamorphoses of Insects clothed with life the dreary old notions of larva and chrysalis that are to be obtained from text-books; Dr. BURDON-SANDERSON, who presided over the Department of Anatomy and Physiology; Dr. RICHARDSON, who added yet more to the long list of his previous researches into the medicinal properties of various chemical compounds; Dr. RADCLIFFE, who illustrated by experiment his doctrines concerning the relations of electricity to human function, are only a few of those whose names crowd upon the mind. And beside them all there comes prominently to the front the name of yet another member of the profession, who, with capacity and learning which entitle him to take his place among medical philosophers, was on this occasion fully occupied in displaying his perfect comprehension and his full acceptance of the part of a bountiful and an untiring host. Whatever may have been the distinction gained by some of our brethren in the paths of science, it was reserved for the Mayor of Brighton to be *facile princeps* in respect of his discharge of the duties of hospitality.

A PAPER contained in M. BROWN-SÉQUARD'S *Archives de Physiologie* for 1869 by M. RANVIER has proved to be the starting-point for a new series of researches on the structure of connective tissue and tendons, which has recently been taken up by M. BOLL and Dr. MITCHELL BRUCE, and which has led to a description of this tissue materially different from that contained in the text-books of some twenty years ago, as well as from the more modern doctrines of VIRCHOW. The latter observer maintained that connective tissue was originally composed of cells, the walls of which became thickened and condensed, forming the intercellular substance, and ultimately underwent fibrillation. The central portion both of the cells and of the processes given off from them he believed remained hollow, and by their intercommunication constituted a canalicular system, ministering to the nutrition of the tissue. The researches of RECKLINGHAUSEN on the cornea to some extent effected a modification of VIRCHOW'S views, by showing that the true cells of that membrane did not form, but were contained within, the stellate cavities and spaces, through which they moved by virtue of their amœboid activity. The researches of KÜHNE on the intermuscular connective tissue of the frog showed that in this animal the cells of that tissue are destitute of a cell-wall, and are not contained in canals, but wander freely through the meshes of the connective tissue. It followed that, in the frog at least, the general idea of a plasmatic system, afforded by the study of the cornea after impregnation with nitrate of silver, could not be extended to the connective tissue generally.

RANVIER commenced by examining the tendons in the tail of young rats, which, after removal from the body, were stretched on the slide, kept in position by a drop of sealing-wax, stained with carmine, and acted on with dilute acetic acid. On examination with a magnifying power of 100 diameters, the tissue was found to present parallel continuous red striæ, which, under higher powers, proved to be cylindrical tubes; and these were seen to be crossed by transverse lines, dividing them into nearly equal segments. On slight pressure being exercised, each of these little segments or cylinders split longitudinally, and, unrolling itself, proved to be a square cell-plate or lamina, with a nucleus near its centre. Around the cell-tubes is an elastic tube or sheath. The tendons are thus, according to RANVIER, permeated by a system of parallel tubes, the walls of which are composed of square cells rolled round till their edges meet, and placed end to end. The stellate figures insisted on so strongly by VIRCHOW as representing corpuscles, he regards as being merely sections of the superficial layer of connective tissue investing the several fasciculi of the tendon, and in these septa his cellular tubes run. The stellate figures brought into view by staining in the subcutaneous connective tissue he also regards as purely illusory; and endeavours to prove it by producing artificial œdema with injection of various fluids into the living animal, and then freezing it before making sections.

A somewhat different view has been lately advanced by BOLL. BOLL describes the cells of connective tissue as granular, elastic, quadrilateral plates, which are arranged in rows and bend around the fasciculi of the tendon. Each plate has a median stripe, which he calls the elastic stripe, which is caused by a thickening of the cell-substance parallel to the long axis of the tendon, and is stained deeply with carmine. It is evident that a row of cell-plates will give a corresponding row of such stripes—that is, a continuous stripe; and this elastic stripe will assume a straight or wavy appearance, varying with the condition of relaxation of the tendon.

Dr. MITCHELL BRUCE followed RANVIER'S method, but gives a different interpretation of the appearances presented. Accepting the views of BOLL on the relation of the cells to the fibrillar bundles, he describes fine lines crossing the fasciculi and dividing them into quadrilateral spaces, in the centre of which a nucleus comes into view on the addition of acetic acid; whilst, after the more prolonged influence of this reagent, the fasciculi become considerably swollen and transparent, and the quadrilateral plates present irregular ragged borders. With nitrate of silver staining, an investment of cells, beneath which a system of serous canals appeared in some places, is brought into view. The cells are rendered still more distinct by the chloride-of-gold method, or by a combination of the silver and gold methods. His view is that the cell elements in the young tendon are plates so arranged as to

bend round the fibrillar bundles, and that they consist of granular protoplasm enclosing a nucleus. The cell-plates are of nearly uniform size, and by their union form a connected whole, which may be aptly likened to a cloth composed of a number of stripes; and the fibril bundles are so enveloped in this cloth that each is surrounded to the extent of half its circumference by one stripe. As we understand it, the continuous expansion pervading the tissue formed by the cells resembles a sheet of corrugated iron. If two such sheets were superimposed on one another longitudinal spaces would remain, and these in the tendon are occupied by the tendinous fasciculi.

THE readers of THE LANCET will find in our columns this week a detailed account descriptive of the plan now in process of adoption for draining Windsor Castle, as well as Frogmore Lodge and all the Royal buildings on the Crown estate of Windsor Great Park. Several years have been spent in considering the subject fully in all its bearings; for certain complications arose, owing mainly to the close proximity of the town and difficulties that occurred in the way of unity of action. The particulars and considerations evolved need not now be enumerated; but, as will be seen, it was determined, soon after the Thames Navigation Act of 1866 came into operation, that the Royal buildings should lead the van of sanitary improvement, and should possess a system of drainage entirely distinct and independent as regards the surrounding districts. It was resolved to accept the recommendations of Mr. WILLIAM MENZIES (who has for some time held the post of deputy surveyor of Windsor Forest and Park), and carry out the "separate" system in its integrity. The internal arrangements of the Castle itself are, and have always been, in admirable order; and the operation of flushing—which is performed regularly every morning, when no less than 50,000 gallons are sent through the pipes of the building—has also been satisfactory in its results. Frogmore Lodge is equally well arranged, and hence we have only to consider whether the system which has been adopted, and is now rapidly approaching completion, is that best calculated to ensure the final and entire exclusion of all foul materials and their gaseous results from the buildings concerned. The responsibility of success must, of course, rest almost wholly with those who have charge of the work. We have already subscribed our adhesion to the "separate" system of drainage, if that system is carried out in its entirety, faithfully and carefully; and our Commissioner informs us that on this head, as far as the works have proceeded, there is little or nothing to be desired. But the projectors and superintendents of the work should clearly understand that, inasmuch as the magnitude of the interests involved is in this case very great, a special importance is given to any particular plan that may have been adopted. The utilisation of the sewage at the outfall is another item of the scheme that will be watched with considerable interest; and we shall be prepared very shortly to offer some remarks upon the only special working point that is, as will be seen by the Report, "still under consideration."

It is a matter of no small significance that Her Majesty should, as it were, inaugurate the advent of the Public Health Act by vacating entirely one of her chief residences for several months in order that the alterations above mentioned may be thoroughly and effectually accomplished. The example thus set ought to be seriously considered; for, as we know that the people have at heart the well-being of their Sovereign and the Royal Family, so it is plain that the QUEEN desires to exhibit to her people by the force of example her faith in sound principles of sanitary engineering as applied for the maintenance and improvement of the health of the community.

Medical Annotations.

"Ne quid nimis."

MR. HERBERT SPENCER ON THE CONTAGIOUS DISEASES ACTS.

IN the series of papers on "Sociology" in the *Contemporary Review*, their author, Mr. Herbert Spencer, discusses what he calls the "objective difficulties" towards framing a really trustworthy estimate of social phenomena. Misrepresentation, he argues, is so common respecting facts of a kind so simple as those relating to the "Two-headed Nightingale" (*apropos* of which or of whom he quotes THE LANCET as correcting the non-scientific account of the phenomenon), that we cannot count upon true representations of social facts which are difficult to observe, and in regard to which the perceptions are so much perverted by interests, prepossessions, and party feelings. As an instance of the extent to which the true representation of social facts is rendered difficult, if not impossible, he cites as typical that of the legislation against contagious diseases. Just as "temperance fanatics," he says, have raised an increasing outcry for strenuous measures to put down drunkenness when a gradual decrease of that vice was going on, so "certain instrumentalities and agencies have created a belief that rigorous measures are required to check venereal disease, when it has been diminishing in frequency and virulence." In proof of this decrease, he quotes the opinions—very guardedly put—of Professor Skey, of Mr. Simon, of Professor Syme, and of other less authoritative lights, to the effect that syphilis is not by any means so terrible a poison as the promoters of the Contagious Diseases Acts would make out. With one exception, and that not a very imposing one, all his authorities are surgeons, a class of the profession who regard the disease chiefly *ab extra*; while he slurs over the testimony of men like Sir W. Jenner and other physicians, who look at the disease in its most formidable aspect, *ab intra*. The Nottingham encyclical, moreover, he views as decisive against the medical doctrine on which the Acts are based. His whole contention is an admirable instance of the truth of Sir William Hamilton's favourite line—

"Turpe est doctori cum culpa redarguit ipsum."

If the virulence of the disease has diminished at all it has done so, as Professor Syme justly surmised, through a radical change in its treatment, the poison still retaining and exerting its subtle power for the development of insidious constitutional diseases like phthisis in all its forms, or adding intensity to non-constitutional diseases such as those of special organs. It is the remoter and far-reaching effects of syphilis, and not only its immediate ones, that the Acts are chiefly framed to counteract; and the working of the Acts hitherto has been, in many cases, to nip the former in the bud. Year by year their tendency towards this result

has been more and more strongly substantiated. And yet a lay observer so intelligent and candid as Mr. Herbert Spencer can quote with approval the *ex parte* statement of another lay observer not nearly so intelligent or candid, that the Acts in their operation are a signal instance of the ease with which, owing to "groundless fright, the concern hitherto exhibited by the Legislature for the personal liberty of the meanest citizen has been heedlessly and recklessly lost sight of." Premature generalisation is the besetting sin of the "philosophical school," to which Mr. Herbert Spencer belongs. If he wants an instance of the extent to which prepossession can militate against a true representation of phenomena, he will find it in the object of Dr. Hutchison Stirling's conclusive *exposé*, entitled "As regards Protoplasm."

A MAN'S MARCHING POWERS.

The amount of physical exertion that a body of men can undergo under certain circumstances is occasionally very remarkable. It is probable that many of our young and comparatively untrained soldiers have made marches during the manœuvres of the present autumn, and with much benefit to their health, such as they have never before undertaken. But these marches have of course been insignificant compared with what our troops have, over and over again, performed during real campaigns in the Peninsula, in India during the mutiny, in Abyssinia, and elsewhere. And, what is more, so great is the influence of excitement and emulation that young soldiers, who feel great fatigue after a long field-day at home, would undergo vastly greater exertion on active service without much difficulty or distress. As everyone knows, the physical exercises which are new and unfamiliar tire most; and it is probably with the first long march, as it is with a first ride to one unaccustomed to horse-exercise, that most fatigue is felt. Troops are but a short time in the field before they acquire "staying power"; the fat diminishes as the muscle increases and the "wind" improves. The men who entered the American armies had not been long on service before they acquired the first requisite of a soldier—the power of marching. In the late Franco-German war very long and difficult marches were made by the Germans. Dr. Roth, who served as the chief medical officer of the Saxon army, mentions that the 18th Division, from the 29th October to the 17th November, marched 260 miles, or 13 miles per diem. The same division marched 160 miles in nine days, or nearly 18 miles a day; while on the 16th and 17th December, in the various manœuvres about Orleans, they marched 54 miles. Considering that they were heavily accoutred—and it is the weight that tells on men, as it does on horses—and that the roads were very bad, these marches, Dr. Parkes tells us in his Report on Hygiene for 1871, are among the most fatiguing on record. The *physique* of the German soldiers was, speaking generally, very fine, and superior to that of the French. But Dr. Frank mentioned to Dr. Parkes an instance of physical exertion undergone by a company of Chasseurs of Macmahon's army which is still more remarkable. The company, after being on guard without shelter or fire during a rainy night, started at 3 A.M. to rejoin its regiment in retreat on Niederbroun, after the battle of Weissenburg. They arrived at 3.30 in the afternoon, and started for Phalsbourg at 6 o'clock. Without detailing the hours of the different marches, we may say that the road was across the hills and along forest tracts, and that altogether the march lasted forty-one hours and a half, and the men were actually on their feet about thirty hours, in addition to the guard duty on the night before the march. Considering the extreme difficulty of that rugged mountain country and the bad weather, this is, adds Dr. Parkes, perhaps the most toilsome march on record. However much labour men may encounter for a short time under the influence of excitement, it is clear that they could no more continue these marches without ample rations than a locomotive engine could proceed without coal; and hence he was, physiologically, perfectly correct who said that armies marched upon their bellies.

THE INDIAN RELIEFS.

The Indian correspondent of *The Times* gave on Monday last the arrangements finally approved for the homeward voyages of the Indian transports during the next cold season. The various troop-ships are timed to leave Bombay at regular intervals from November 15th to March 15th, proceeding *viâ* the Suez Canal to England, where they may be expected to arrive some five or six weeks later. No doubt it is necessary that the "cold season" should be chosen for the movement of troops in India, and for the trying passage of the Red Sea; but the authorities appear to forget that men habituated for years to a tropical climate feel very acutely exposure to the cold of the Bay of Biscay and the English Channel in the winter months. It is, we are glad to notice, intended to postpone the arrival of the invalided men until April, but even "time-expired men" are worth a little more care than is now bestowed upon them, for no provision of warm clothing is made until the troops are landed in England. The splendid Government transports are abundantly furnished with sheets and blankets, which are washed after each voyage in the Admiralty laundry at Haslar. We would suggest that flannel trowsers and jackets might be supplied for the use of the troops in the same way, and that a quantity of great coats might be taken in store, to be served out on board, instead of waiting till the troops land.

It is not generally known that "under the pennant" the soldier comes under the authority of the officers of the ship, who are entitled to employ the military in various duties. A favourite one with first lieutenants of troop-ships is to set the soldiers to holystone the decks with abundance of water and no shoes. This is particularly the case in the Channel when the ship is approaching port, and the result of it may be traced in the number of soldiers who go on the sick-list immediately after landing from the effects of this exposure. We could, if called upon, name more than one regiment which has lost by invaliding and death a large number of men solely from this cause; and we warn the military and naval authorities thus early that there may be time to inaugurate a new system by which the present hardships experienced by veterans returning home may be mitigated.

ENGLISH WATERING-PLACES.

Satisfactory must it be to paterfamilias to know that a seaside sojourn for himself and family can be had healthier in character, as well as cheaper in cost, within the United Kingdom than on foreign shores. According to the Registrar-General's statement of the (annual) rate of mortality in the second quarter of the current year in the districts or sub-districts of England comprising and approximately representing the watering-places, the death-rate of Ramsgate was as low as 11·7 per 1000 living; that of Eastbourne 12·8; of Folkestone 12·9; of Hove 13·9; of Worthing, or Littlehampton, 14·6; and of Hastings and St. Leonards 15·5. Ramsgate heads the list in point of salubrity; while the average death-rate for the whole country is 21 per 1000, and for the forty seaside and inland watering-places 18·2. Her next-door neighbour, Margate, contrasts most unfavourably with her, the mortality there amounting to 22·5 (or

nearly double) per 1000. There are, of course, reasons for this. In the first place the Registrar-General, in a footnote to the table of mortality of the chief English watering-places in the ninety-fourth quarterly report, admits that "no corrections have been made in this table by the addition or exclusion of deaths in public institutions. The deaths and rates of mortality for Hastings and Cheltenham will not be found to correspond with the more correct figures in Table 9." Unfortunately for Margate, with her three large public institutions—the Sea-bathing Infirmary, the Metropolitan Institution for Children, and the Wilderness for Adults (to say nothing of many private institutions for the invalid child, the existence of which is hardly known to the Margate folks themselves) this want of correction in Table 10 conveys an impression open to considerable modification, to say the least. She is resorted to, moreover, by an exceptionally large number of invalids, who of course swell the mortality returns. The number of deaths from these several sources averages from 80 to 100 yearly—a number of itself enough to vitiate the value of the gross death-rate. As to the kind of disease which prevails at Margate, not one death during the present year has been due to small-pox, scarlet fever, typhus, typhoid, or diarrhœa—the zymotic class being represented only by whooping-cough, which, though generally mild at Margate, was this year exceptionally fatal from the sudden vicissitudes in temperature. The fallacy of the Registrar-General's returns as a basis for estimating not the mortality only but the health of watering-places may be inferred from the fact that at such towns as Worthing, for example, and Bognor, lodgings have been let while scarlet fever has been rife in them, so that, after a very short sojourn under their roofs, families have returned with the seeds of a fatal malady among one or more of their members. With all these facts in abatement of a too sanguine estimate of the salubrity of our watering-places, it remains incontestable that, measured by similar resorts abroad, they are in all respects to be preferred for health, comfort, cheapness, and society.

NEW REGULATIONS FOR LONDON WATER-SUPPLY.

By the Metropolis Water Act, 1871, the water companies were required within six months after the passing of the Act to make regulations for preventing waste, misuse, or contamination of their supply, and to prescribe the nature and quality of the fittings to be used; such regulations to be subject to the approval of the Board of Trade. Some delay has arisen in the latter respect from circumstances to which we have previously referred; it is enough that they are now before us definitely settled, and that all householders in the metropolis will be more or less affected by them. We do not propose to reproduce them here, as they have already been published in full by the daily newspapers, and the companies will no doubt take care that all their customers are supplied with a copy. Suffice it to say that, so far as we can gather, these regulations are very similar to those which are in force in Manchester and other places where the constant-supply system has been introduced, and they appear to us quite necessary for adoption in London if the constant system is to be substituted for the intermittent, as it certainly should be. Thus it is provided that all pipes shall be strong enough to bear the constant pressure, and no pipe is to be laid through drains or other places where there is a liability to contamination, if such can be avoided, and, if not, the supply-pipe is to be protected by an exterior cast-iron pipe or jacket. Pipes laid in the open ground are to be at least 2½ ft. below the surface, and in any exposed situation they must be properly secured against the effects of frost. Waste-pipes in cisterns, those fertile sources of water-poisoning, are to be either removed or converted into "warning-pipes," with a discharge above ground. Buried cisterns are prohibited, and so are the objectionable water-butts. All waterclosets are to be provided with cisterns or service-boxes, in conjunction with an efficient waste-preventing apparatus, and the supply pipes of the companies are in no case to be in direct communication with a watercloset. It will be seen that these regulations involve some much-needed sanitary reforms in respect of water-supply, and the sooner the entire metropolis is brought under their operation the better. We must not, however, expect too much, remembering that the existing state of things cannot be put an end to but by degrees, for the work is one of great magnitude, entailing a thorough inspection of the water fittings, and more or less expense in every house supplied. It needs to be borne in mind that no company can be required to give a constant supply to a district if it can be shown that one-fifth of the houses are not provided with the fittings prescribed by the regulations; but owners or occupiers of premises will be bound to put such fittings within two months after receiving notice from the company to that effect.

THE MEDICAL CLUB.

THE present proprietor of the Medical Club has recently put forward some propositions with a view to extending its usefulness and future development. The present building, not having been originally erected for the purposes of a club, possesses several structural imperfections. It is urged that its unsuitableness has been long recognised by the promoters of the Club, but the premises have been regarded as of a temporary character, to be occupied pending the provision of a really good and independent building in a suitable situation, and better adapted to the character which a club specially belonging to so large and influential a body as the medical profession ought to assume. Captain de Vic. Valpy, the proprietor, states that he has had the refusal of a site in Pall Mall fit for the erection of a first-class club-house. Before discussing the nature of the arrangements by which he proposes to carry out his scheme for a new and enlarged club, upon a far more ambitious scale than the present, it is important that the members should clearly understand that the scheme is simply put forward for their consideration, and that if the support it receives is not sufficient to justify the acquisition of new premises the club will, as a matter of course, be conducted as at present. The outlay involved in the purchase of the new site and the erection of the building will be very considerable, and before accepting such an undertaking Captain Valpy naturally desires to ascertain the amount of support he is likely to receive from the existing members of the club. The expense of fitting up and furnishing the new building has also to be considered. Without entering into details, Captain Valpy proposes, in effect, to conduct the new club on the proprietary principle as at present; but he wants extra entrance fees and subscriptions of the members guaranteed, to enable him to build and furnish the new institution. In the event of the members desiring to own the club themselves, however, they are to have the option of purchasing it at a fair price, to be agreed upon within three years. Now, it appears to us that if an improved club-establishment be needed, and the money be forthcoming for that purpose, it would be the more direct course to make the club a joint-stock affair, in the same manner that all the old-established clubs were founded, the building and its furniture being the *bonâ fide* property of the members. On the other hand, if the property belonged to Captain

Valpy, and the members simply paid him for the use of it in the shape of an entrance fee and annual subscription, every member would know where his risks ended. The scheme is, as we have said, for the consideration of the members of the club; but we very much doubt whether they will be found willing to incur the extra expense required in either case.

HOUSE ACCOMMODATION IN SCOTLAND.

THE detailed Report of the Scotch Registrar-General and his colleague, Dr. Stark, on the census of the population of Scotland in 1871 contains some most interesting particulars of the manner in which the people of that country are lodged. It is observed with perfect truth that the proportion of persons to a house conveys no just idea as to whether overcrowding exists or not, for houses differ so much in size that one may be a mansion wherein 500 persons are comfortably or even luxuriously accommodated, while another may consist of but one room, and is overcrowded with 5 inmates. There were 738,836 *families* in Scotland in 1871, and of these 1515 lived in one windowless room each, 237,270 in one room with a window, 274,938 in two rooms, 92,892 in three rooms, 43,913 in four rooms, 23,510 in five rooms, 17,966 in six rooms, and the remaining 46,832 families each in seven rooms and upwards. Very nearly a third of the population live in houses consisting of only one room, more than two-thirds in houses of one or two rooms, and 82 per cent. live in houses containing not more than three rooms. Altogether 88 per cent. of the Scotch people, constituting the artisan, labouring, and pauper classes, occupy dwellings of not more than four rooms each, and it is observed that "few if any of the class of population who inhabit such houses pay national taxes," leaving only 12 per cent. to bear the burden of taxation. The dwellings consisting of only one windowless room are mainly found in the highlands and in the islands, notably in Shetland; they are chiefly rude huts with an open chimney in the centre; and it is claimed for Shetland that, notwithstanding her population are so indifferently housed, they are pre-eminent for their healthiness and for their morality—a fact which leads the census authorities to conclude that "house accommodation is only one of the causes, and after all perhaps not one of the most important, which affect the healthiness and morality of a people."

A striking comparison is made between Glasgow and Edinburgh in respect of house-room: in the latter 78 per cent. of all the families lived in houses of four rooms and under, while the corresponding proportion in Glasgow was 94½ per cent. Dundee, Paisley, and Greenock differ very little from Glasgow in this respect, while in Aberdeen, Leith, and Perth the proportion ranges from 85 to 90 per cent. That in four out of the eight principal towns of Scotland less than 10 per cent. of the population occupy houses of more than four rooms each, must surely be one, at least, of the causes why their normal death-rates are so high.

We have not space to quote the statistics given in this report with regard to the effect of the "flat" system upon the house accommodation of the working classes, but it is worthy of note that the Scotch Census Commissioners do not speak favourably of that system. They say that within the last thirty years a great change has come over Scotland relative to the housing of the people, in the direction of building lofty piles of houses, each consisting of from four to eight "flats," or separate sets of rooms, the idea being that in suchwise a more perfect separation of the sexes and a diminution of overcrowding would result. But "hard stubborn facts" have proved to the Commissioners that very nearly a third of the families living in these sets of rooms let their spare apartments to strangers: "The increase of such houses, therefore, instead of diminishing the overcrowding of the people, is, as years advance, causing a much larger proportion of the people to live as lodgers or boarders"; and, as a matter of fact, the operative finds in his "flat" of three or four rooms "an inducement to him to crowd his family to a greater extent than when he occupied a house of one or two rooms." The suggestion that the development of the "flat" system may be chargeable with the observed increase in the general mortality and in the illegitimate births puts the matter in a very serious light, and means should be taken to bring the opinions of the Census Commissioners upon these points to a test adequate for their demonstration or their disproval.

THE INVALIDING OF SOLDIERS.

PROF. MACLEAN, in his report of the Medical Division of the Victoria Hospital, makes some remarks upon the character of the diseases of the patients admitted into that institution, and the difficulties which have to be encountered in restoring the soldier to a state of health fit for general service. The vast majority of the invalids come from India, and possess one feature in common: the malarial cachexy runs like a thread through all their ailments. The eradication of this condition is a work of time; and time, says Dr. Maclean, is exactly what they have not at command. The Netley establishment is the great invaliding hospital for the foreign stations of the army, and ample as is the accommodation, were the medical officers to detain every man until the sequels of malarial poisoning were so far overcome as to fit him for military service in any part of the world, the whole business of invaliding would be arrested. The admissions into hospital from India commonly amount to 300 or 400 at a time, and as many as 850 invalids have had to be admitted and cared for in one day. As invalids cannot be detained during the busy part of the year for prolonged medical treatment, the medical authorities are compelled to send up a considerable number of men for final discharge who might, time and circumstances permitting, be made once more effective. He likewise points out that, if an arrangement could be made by which men, discharged from Netley as fit for service, could be employed for even a year on home service, it is certain that many men now discharged the service might be made effective. As it is at present, the military authorities are compelled to accept the term "fit for service" in its ordinary and most extended sense, and the consequence is that a man finds himself back again, perhaps in the very region where he contracted the disease for which he was originally invalided, before his constitution had been fortified by a sufficiently long stay in England to withstand the effects of a hot climate.

"SPECS" FOR THE AGED POOR.

WE have on more than one occasion called attention to a mode in which the tedium of hospital convalescence, and the mental depression attendant on physical weakness, especially when associated with poverty, may be alleviated—namely, by the gift of old newspapers and periodicals; and it is satisfactory to know that our suggestion has been largely acted upon, and that the inmates of several of the London hospitals and infirmaries have greatly benefited by the boon. Only last week we published an expression of thanks voted by the governors of Charing-cross Hospital for a donation of this kind. But it may have struck many persons who noted the suggestion referred to, and its prompt realisation, that numbers of sick and aged patients would, from defective or failing sight and the inability to purchase a "pair of specs," be incapable of profiting directly

by the liberality of donors of current literature. We are much gratified, therefore, to learn that a "happy thought" has occurred to a Manchester firm of opticians, who, with refined generosity, have forwarded a few hundred pairs of spectacles for the use of poor old people in workhouses and infirmaries. This is an example which might well be followed in London and other places. It is something to contribute, by the bestowal of food and raiment, to the mere physical comfort and enjoyment of our fellow-creatures in need; it must be a yet more exalted species of charity to aid in dissipating the sombre cloud of shapeless reverie which is apt to brood in the minds of the aged poor, and in supplying them with materials from which healthy ideas may be formed. The gift of old books and newspapers, and of spectacles wherewith to read them, cannot fail, wherever the benefit is applied, to effect this object. It will sweeten the mental atmosphere of many a white-haired pilgrim, and cast a glint of sunlight on his pathway as he travels to the tomb.

HEALTH OF POST-OFFICE OFFICIALS.

THE eighteenth Report of the Postmaster-General just issued contains some extracts, (compiled by Dr. Waller Lewis, Medical Officer to the Post-office) from the medical report upon the London offices for the past year. From this we learn that 40 deaths occurred among the entire postal staff (which consists of 5302 persons whose ages vary from fourteen to seventy), or an average of 7·5 per 1000. One death only from small-pox occurred, or ·2 per 1000, "being less than one-tenth of the mortality from this disease that obtained in London generally," a result very naturally ascribed to systematic vaccination. Eleven officers were attacked with scarlet fever, but with no fatal result, and "there has been considerable absence from duty from illness of a passing character of the nature of bronchitis, rheumatism, neuralgia, and severe colds, caused mainly by exposure to draughts of cold air while at work in the chief office." We cannot congratulate Dr. Lewis upon the exhaustive nature of his report, if, indeed, as would appear, the pith of it is now before us. We were told last year that the medical officer "hopes to be able to give next year a full and complete account of the epidemic of small-pox, as well as the previous one of scarlet fever, as far as they shall have affected the Post-office." The "full and complete report" is conspicuous by its absence, and the contrast between these brief notes and the very useful and elaborate reports from the Medical Inspector of Customs and the Chief Surgeon of the Metropolitan Police, recently noticed in these pages, is marked in the extreme. It is surely possible to glean something medically noteworthy from a body of 38,000 persons, 5302 of whom reside or are employed in the metropolis; indeed, we opine that this particular department of the Government now affords a larger field than any other for the elaboration of useful material on the effect of out-door and in-door work, by head and hand, and hence on the causation and prevention of disease.

DANGERS OF ALIGHTING FROM OMNIBUSES OR RAILWAY TRAINS IN MOTION.

THERE are few persons who possess the knowledge of getting off moving bodies at all times with safety; and there are many who do not know why they continue to move in the same direction as the omnibus or train for some time after they reach the ground. This shows an ignorance of the ordinary laws of motion, for a person in a moving car has himself the velocity with which the car moves, and therefore if he rest at the spot of ground upon which he alights, a force sufficient to render motionless a body of his weight at the given velocity will be necessary to enable him to remain on this spot, and as very few human beings possess sufficient firmness in their bones or on their feet to enable them to do this, they either are thrown down, or the bones of the leg give way, as in the following case. A healthy man, aged forty, alighted sideways from the end of a slowly moving omnibus, in such a manner that his right side was towards the end of the omnibus; he was therefore unable to continue to move in the direction he had hitherto been going, and was consequently thrown violently down, and then found himself unable to rise. Upon being taken to University College Hospital, it was found that both bones of both legs were fractured in a manner which fully proves, if proof were necessary, the truth of the above remarks. On the right side it was found that the tip of the external malleolus was broken through, and that the tibia was fractured at about an inch and a half above the ankle-joint, the foot being inverted; whereas, on the left side, the tip of the internal malleolus was broken off, but the fibula fractured at about two inches and a half above the joint, the foot being everted. It is to be hoped that this will be warning sufficient to those who may otherwise have more leisure to reflect upon it when laid up for many weeks in the wards of a hospital.

INTERNATIONAL COPYRIGHT.

WE have on more than one occasion recently noticed the subject of international copyright with America, showing the injury done to English medical authors and publishers by the wholesale manner in which their works are republished in the United States. Continental authors, and particularly German ones, have similarly suffered by unauthorised translations of their works on the other side of the Atlantic, these finding their way eventually to this country in the ordinary course of trade. No translation of a foreign work can be published in England without the author's permission; and this, as in the case of the New Sydenham Society, is seldom withheld. It behoves Englishmen, therefore, not to promote the piratical proceedings of American publishers by undertaking for them the translation of French or German works with a view to their unauthorised reproduction in America. Overtures have, we learn on good authority, lately been made to more than one English practitioner to undertake work of this character; and we earnestly exhort our fellow-countrymen not to lend themselves to any scheme by which the rights of authors will be compromised either here or abroad.

QUEEN'S COLLEGE, BELFAST.

THE report of the President of Queen's College, Belfast, for the past year, forms a Parliamentary paper recently issued, and gives a highly satisfactory account of the working of the institution in all its branches. The number of medical students has steadily increased, being 184 in 1870, against 116 ten years ago, and the Principal does not fail to express his appreciation of the medical department in the following terms:—

"I feel bound to express much gratification at the great success of the medical school in this College. In the year 1849-50 that department contained 55 students—28 matriculated, 27 non-matriculated. Now 184 medical students are in attendance—168 matriculated and 26 non-matriculated. I may here remark that the matriculation examination for medical students is both extensive and *bonâ fide*, laying the foundation of a sound general education, giving afterwards to the student and the practitioner a great superiority over non-matriculated men. The erection on the College grounds of anatomical rooms not inferior to any in the empire, the existence of the excellent General Hospital of Belfast, opening its important advantages of practice and observation to the students of this College, the admir-

able instruction given by the medical professors—not less zealous and able than their colleagues in the other departments of the College,—all these have contributed to make the medical school of this College one of the most flourishing in these kingdoms."

PRELIMINARY EDUCATION.

THE recent Preliminary Examination in Arts for the diploma of member of the College of Surgeons gave the following results. Of 235 candidates 135 passed, and 100, or 42 per cent. of the whole number, were rejected. That the standard is not a very high one will be gathered from a perusal of the requirements—viz.:

COMPULSORY SUBJECTS.—1. Reading aloud a passage from some English author. 2. Writing from dictation. 3. English Grammar. 4. Writing a short English composition, such as a description of a place, an account of some useful or natural product, or the like. 5. Arithmetic. No candidate will be passed who does not show a competent knowledge of the first four rules, simple and compound, of Vulgar Fractions and of Decimals. 6. Questions on the Geography of Europe, and particularly of the British Isles. 7. Questions on the outlines of English History—that is, the succession of the Sovereigns and the leading events of each reign. 8. Mathematics. Euclid, Books I. and II., or the subjects thereof; Algebra to Simple Equations inclusive. 9. Translation of a passage from the second book of Cæsar's Commentaries "De Bello Gallico."

We have carefully read through the papers put before the candidates, and find nothing but what a youth of fair education ought to be able to answer, and we reluctantly come to the conclusion that it is rather the middle classes who require the Education Act and a School Board than the poor, for whom already so many excellent national schools exist. The fault lies, we imagine, with the schoolmasters, who as a body may be said to be absolutely ignorant of the art of *teaching*.

MEASURE OF THE ACTION OF PEPSIN.

A VERY interesting mode of measuring and exhibiting the action of pepsin is described by Gruenhagen in *Pflüger's Archiv*, v., 369. A piece of moist blood-fibrin is soaked in water containing 0·2 per cent. of hydrochloric acid until it is converted into a mass like jelly. This jelly is placed on a funnel, and when the acid has ceased to drip a few drops of pepsin solution (glycerine extract, for instance) is added. In two minutes the fibrin begins to liquefy and to drop, as peptone, from the funnel. The value of the digestive solution can be measured approximately by the rate at which the solution takes place. Von Wittich, commenting on Gruenhagen's process, says it is better to take, as the measure, the quantity of liquid which falls from the funnel in a given time. Von Wittich adds many interesting particulars on the chemical changes which take place in the digestion of fibrin.

MEDICAL PRIZES.

FOR the sets of richly-bound volumes hitherto awarded as prizes to meritorious students, the medical faculty of the University of Glasgow will henceforth substitute medals bearing severally the *effigies* of the scientific lights who have shed lustre on that seat of learning. They have commissioned the execution of a series of these "coins of intellect," appropriate in design and elegant in art. Four of the medals have already been produced. On one is represented the fine, sagacious, typically Scotch countenance of John Hunter; on the second, the less powerful, but more delicate and subtle features of his brother, Dr. William Hunter. On the third we recognise Dr. Joseph Black, the discoverer of latent heat—a man of exquisite scientific insight. And on the fourth we have the likeness of his master, Dr. William Cullen, whose nosology still commands the admiration of the profession for its philosophic simplicity. The two latter portraits have been engraved from cameos by Tassie; that of William Hunter is taken from a medallion by Burgi; while that of John has been modeled from various sources—from the celebrated picture by Sir Joshua Reynolds, and a pencil sketch from the life. The style of the portraits is thoroughly academic, classically chaste in its repose. Their modeler is Mr. N. Macphail, of Glasgow, an artist of much promise. We congratulate the medical faculty of the University of Glasgow on an innovation in academic usage at once graceful and practical — graceful in its tribute to the "fixed stars" of the past, practical in its encouragement to the lights of the future.

TEN YEARS BURIED.

THE daily journals have been marvelling over the case of a gentlewoman who, ten years after burial, was exhumed from the family vault and found unchanged in bulk, outline, and expression. The case is easily explicable. Loss of water by evaporation is the first cause of corporeal change after death. Even when life is departing, this desiccating process has already begun, the eyeballs losing their brilliancy and getting flat and dry, the features shrinking, and the gloss leaving the hair and skin. These changes proceed more rapidly when life has fled. But atmospheric agency can quicken or arrest the decomposing process. Under the sky of Palestine the daughter of Aiah, we are told, watched beside her murdered kinsmen for months, "from the beginning of barley harvest" in April to the rainy season in October, to protect them from beasts of prey. In his great work on "Médecine Légale," M. Devergie notes the changes that come over the *cadavera* in the Morgue. As a rule, their muscles retain their natural form and colour for two months and a half. With the lapse of another month the scalp, the eyelids, and the nose are still in such preservation that the age can be told. On the expiry of four months and a half, complete destruction of the face has occurred—the bones have become brittle, the massive muscles of the neck and thighs have run to adipocere. This, be it remarked, takes place under conditions of exposure in a covered building. The lady whose exhumed body presented no appreciable change after ten years had been all that time removed from atmospheric vicissitude.

THE SUPPLY OF SEAMEN.

A GREAT deal of agitation is going on just now in the northern and north-eastern ports of the kingdom as to the supply of seamen for the mercantile marine, and the Marine Secretary of the Board of Trade is "starring it" in the provinces and delivering semi-official utterances on the subject. It is a duty to remind those interested in this question that *physique* is, among other things, necessary; that no care whatever is taken to find out whether healthy men are shipped; and that the clause of the Duke of Richmond's Act relating to the inspection of seamen is still, to all intents and purposes, a dead letter.

THE FREE SCHOOL OF MEDICINE AT STRASBURG.

THE Free School of Medicine at Strasburg has ceased to exist. After the recent war, some of the professors and vice-professors of the Faculty of Strasburg sent in their resignations and gave up all connexion with the Faculty, which was to become German. They are now waiting for the establishment of a new Faculty in France, in which of course they will have a right to be appointed. Some of the

professors, however, found it extremely hard to give up all their valued interests and to break all their cherished ties in Alsace, so they proposed the creation of a free Faculty of Medicine in Strasburg, in which they would continue to represent the French element and teach in the French language. They had gathered about seventy students, and had been able to do some good service; but the completion of the German University of Strasburg has, it seems, annihilated their efforts and destroyed their plans; they have therefore officially given up their undertaking, and Professor Schutzenberger, the dean, in a farewell speech to the students, spoke in the name of the professors, and expressed their feelings of mingled regret and hope. The *Temps* has published an address from the Strasburg students, in which the warmest sentiments of respect for their former professors and of love for France are openly expressed.

MEDICINE AND MINING.

THE Scottish Midland and Western Medical Association—a body which comprises the great bulk of the country medical practitioners in the counties of Lanark, Ayr, Linlithgow, Renfrew, Stirling, Dumbarton, and Clackmannan—met the other day at Glasgow to consider the position of the profession with regard to the remuneration of medical duties in connexion with public works. At the close of the meeting it was unanimously agreed to submit to the coal and iron masters of these counties a resolution to the effect that the conditions of medical attendance upon coal and iron works ought to be the same as those which have existed for years throughout England and Wales—remuneration, to wit, at the rate of threepence per week for men and three halfpence for boys and under-hands. The present fee of twopence per week, under existing circumstances (the increase of wages, the prices of provisions, and so forth), the Association consider inadequate.

ARMY MEDICAL EXAMINATIONS.

WHAT is the reason for the delay in forwarding examinations for appointments in the British Medical Service and in the Control Departments? It has been decided to make a vital change in all army examinations forthwith. The steps preparatory to this innovation are now being taken. Examinations for the Artillery and the Engineers, as well as for the Control, will henceforth be all conducted at once, with the anticipated result of saving a great deal of money and time. This change will be the chief one. Several of the papers submitted to the candidates will be the same; and the examinees, according to the respective branches they wish to serve in, will have to write at the top of their papers the word "Artillery," "Engineers," or "Control." Examinations for the British and Indian Medical Services will also be amalgamated.

EDINBURGH UNIVERSITY AND THE LADY STUDENTS.

AGAINST Lord Gifford's judgment (which, it will be remembered, sustained the plea of Miss Jex Blake and her friends that they were entitled to pursue their medical studies at the University with a view to graduation) the Senatus Academicus have just lodged a reclaiming note. The case will come before the Second Division of the Inner House. In connexion with the Edinburgh Infirmary and the right of firms to vote in the election of its governing body (a vital point for the admission of the ladies to clinical study in its wards), Lord Jerviswoode, our readers will recollect, decided that firms can vote only by the written authority of all the partners. Against this decision also a reclaiming note has been lodged; and it is understood that, when the judgment comes up for review, several points in it will be objected to by the respective parties to the action. The "law's delays" seem to have cost the ladies another year, notwithstanding the statute in their favour which in January, 1872, was passed by the Court of Contributors.

THE Medical Director-General of the Navy having reported that the death and invaliding rates in the service are greatly increased by inattention to the quality of the food supplied and the gross neglect in the cooking, the Admiralty have established a new school of *cuisine* on board the *St. Vincent*, at Portsmouth, and have selected Captain F. P. Warren, R.N., to superintend the fitting-up of the ranges and to ensure the soundness and varied quality of the food.

STUDENTS who wish to acquire a thorough knowledge of medical microscopy, on easy terms, will find their wants answered by the Medical Microscopical Society, the preliminary meeting of which will be held early in October for the enrolment of members, the drawing up of rules, the election of office-bearers, and for other business. Communications should be addressed to Mr. J. W. Groves, St. Bartholomew's Hospital, E.C.

ALL students desirous of availing themselves of the educational advantages afforded by the School of Physic in the University of Dublin will find the requisite information in a little pamphlet, embodying the history and regulations of the school, just issued from the University Press. The Rev. Samuel Haughton, M.D., Medical Registrar, Trinity College, Dublin, will readily supply further details.

THE Board of Trade issued a quarantine notice on the 31st ultimo, indicating that the Danish Government had declared Narva, in the Gulf of Finland, infected with cholera, so that all vessels arriving from that place in Danish ports will be subjected to quarantine.

THE University of Munich, at its recent 400th anniversary, conferred upon Mr. Simon the honorary degree of Doctor of Medicine, "propter præclarissima de sanitate publicâ tuendâ atque augendâ merita."

SIR ALEXANDER ARMSTRONG, K.C.B., Director-General of the Medical Department of the Navy, commenced his annual official inspection of the Royal Hospital and other naval establishments at Plymouth, on Monday, the 2nd inst.

THE old pupils and friends of Dr. Basham are about to present him with a testimonial of their regard on his retirement from the chair of Medicine at the Westminster Hospital, which he has held for twenty years.

IN Queen's College, Galway, the Chair of Materia Medica has become vacant, Professor Simon M'Coy having resigned. The post, it is stated, is worth between two and three hundred pounds a year.

ON the motion of the Marquis Townshend, the guardians of St. George, Hanover-square, contemplate throwing the baths in the workhouse open to non-resident paupers.

THE quality of the Liverpool water-supply is exciting considerable uneasiness in the town, sewage matters being said to percolate into the wells.

SMALL-POX has now almost disappeared from London, the deaths last week only amounting to eight; of these six were of persons unvaccinated.

THE PUBLIC HEALTH ACT OF 1872.

WE publish, for the information of our readers, a *résumé* of this Act, which, as a Bill, was considerably mutilated, and was, indeed, eventually bisected, all the so-called original clauses being removed, and those only relating to organisation and consolidation being retained. The chief objects to be attained by the Act are, the extinction of a host of authorities, and the creation of urban and rural authorities by whom all sanitary powers are henceforth to be exercised. This is the radical principle of the Act, which has, however, two original clauses, one being the creation of port sanitary authorities, and the other compelling both urban and rural authorities to appoint medical officers of health and inspectors of nuisances, a moiety of whose salary shall be paid out of the Imperial Exchequer. The Act consists of 60 sections, and does not apply to Scotland or to Ireland, or to the metropolis, except as regards the sanitary authority of the river Thames, which is vested in the Corporation of the City of London.

Clauses 3 to 19 refer to urban and rural sanitary authorities, into which the whole of England will henceforth be divided. Urban sanitary authorities will consist (1) of the corporate body of a borough constituted such either before or after the passing of the Act, (2) or the Improvement Commissioners of an Improvement Act district, or (3) the Local Board. The boroughs of Oxford, Cambridge, Blandford, Calne, Wenlock, Folkestone, and Newport in the Isle of Wight, are excepted, not being deemed to be boroughs; but Cambridge will be deemed an Improvement Act district, and Oxford will be included in the Local Government district.

Rural sanitary authorities will consist of the guardians of any Union which is not within the area of an urban sanitary district.

All sanitary authorities constituted under this Act must hold a first meeting within twenty-eight days after the passing of the Act—i.e., on or before the 8th of September.

All Local Government Acts, as well as the Public Health Act of 1848, will remain in force in urban sanitary districts, and the new authority, rural as well as urban, will take in hand all powers possessed under the Sewage Utilisation and Sanitary Acts, the Common Lodging Houses, the Diseases Prevention, and the Bakehouse Regulation Acts.

All urban and rural authorities must appoint a medical officer of health and an inspector of nuisances, whose appointment will be subjected to the same conditions with the Local Government Board as now exist relative to the appointment of parochial medical officers.

The inspectors of the Local Government Board may attend the meetings of urban and rural sanitary authorities.

Clauses 20 and 21 refer to the port sanitary authorities, and empower the Local Government Board to constitute any sanitary authority on the edge of any port the sanitary authority of that port, with, of course, power in accordance with the provisions of the Sanitary Act of 1866 over all craft moored therein. The City Corporation are by a special sub-clause constituted the sanitary authority of the port of London, and are to pay all expenses in connexion therewith.

Clauses 22 to 25 comprise alteration of areas (as empowering the Local Government Board to declare any rural district an urban district, &c.); but these have no special significance for our readers.

Clauses 26 to 32 refer to the union of districts.

Clause 33 refers to the repeal of local Acts, and provides for the payment of compensation in cases of abolition of offices; and there are nineteen miscellaneous clauses referring, among other matters, to the transference of the working of the Metropolis Water Acts and the Alkali Act from the Board of Trade to the Local Government Board, to the provision made for the salary of the medical officer of the Local Government Board, to the transfer of all officers and others employed for the purposes of the Act, to powers for the ordering the destruction of infected bedding, &c., and to the imposition of penalties on any persons who wilfully disobey sanitary regulations.

The remaining six clauses refer entirely to legal proceedings and financial arrangements, which cannot, under any circumstances, concern our readers.

Copies of the Act have been sent by the Local Government Board to all boards of guardians, local boards, town councils, and improvement commissioners, with a circular explanatory of the general provisions of the Act. Touching the appointment of medical officers of health, the several local authorities are informed that an order will shortly be issued containing regulations with regard to the qualifications, appointment, duties, salary, and tenure of office under which such appointments must be made in all cases where the local authorities elect to have a moiety of the salary paid out of the Imperial exchequer. The inspectors of the Board have been instructed to communicate with the guardians in their respective districts relative to bringing the provisions of the Act into operation, while to urban authorities it is intimated that the inspector of the district will advise and assist them if they so desire.

THE AUTUMN CAMPAIGN.

(From our own Correspondent.)

1st Division 1st Army Corps, near Blandford, August 29th, 1872.

THE 1st Division, under Sir A. Horsford, returned here on Tuesday, taking up exactly its old quarters vacated four days ago, the cavalry pitching their tents once more on Blandford Down, and the infantry and part of the artillery on the Race Down, about three miles from Blandford; but their old neighbours, General Browning's 2nd Division, had departed to occupy the position just left by the 1st Division on Bottlebush Down. The two parts of the Southern Army were not allowed to come into contact, but marched by different roads—friends up to Sunday night, deadly enemies on Monday, when a drawn battle was fought between them; and on Tuesday, silently passing each other, anxious to try further conclusions, yet not permitted to come into contact. The 1st Division marched from Bottlebush Down at 9 A.M. by three different roads through St. Giles's, Gussage All Saints, and Gussage St. Michael to the Race Down, and everybody remarked how well the men looked—strong, healthy, and brown, like gipsies. Indeed, as yet everything has been in our favour—the weather beyond description beautiful, hot sunny days, bright bracing nights, with heavy dewfall. Nowhere in the world, I fancy, could a better situation for a camp be found than on these delightfully green and elastic downs, rolling away almost as far as the eye can reach in gentle undulations. The water-supply is plentiful as the quality is excellent—cool and clear, though from the nature of the subsoil I would expect it to contain large quantities of lime. These downs, indeed, are nothing more than chalk hills clothed with turf about six inches thick. Only one shower has wetted our tents since the troops were massed here, and that fell in the night.

All these circumstances considered, the scarcity of sickness directly ascribable to camp life is not to be wondered at; for although the different field hospitals have at times had many occupants, the cases of disease have not—excepting a small number—been caused by exposure or climatic influences, but have nearly all been brought into camp with the troops. In several cases men broken down in health have been allowed to accompany their regiments—men who, directly the heavy work began, of course at once presented themselves at the hospitals. Venereal disease forms by far the greater number of admissions, especially in the regiments from London. Exposure to the rain has resulted in febricula in a few instances, but no case of sunstroke has been reported. Sprains, of course, and bruises there are several, and the only case of death has resulted from concussion, followed by compression, of the brain—the result of a fall, which also fractured the man's leg. Indeed, excepting venereal in its various forms, and some chronic cases of disease carried here in the persons of men who in many cases ought never to have left their barracks, the admissions have been exceedingly few in a force of about 14,000 men—the strength of this, the Southern army. As soon as

these have been disposed of to Netley, our reserve hospital, the field ambulances will be soon crowded, as one or two have been during the first ten days of the campaign. The men are worked hard, and daily it becomes easier for them as their health improves and their strength increases. The rations are excellent, a pound of meat being allowed, and no complaints have been heard; indeed, everything is calculated not only to teach the soldiers their duty, but also to send them back to their stations in as vigorous health as possible.

I will now describe shortly the medical arrangements of the 1st Army. A Deputy Inspector-General of Hospitals directs the whole, with a surgeon-major at the head of the two divisions, under each of which are three field hospitals; six therefore for the whole corps. A field hospital, again, consists of three marquees and six bell-tents, a surgeon, two assistant-surgeons, and a staff of ten army hospital-corps men. Each marquee is intended for fifteen men, giving forty-five patients for the hospital. I have just given you the outline. In my next letter I will go more into particulars; but I may state that a man taken sick first presents himself before the medical officer of, and with, his regiment, who, if necessary, sends him for treatment to the field hospital. From there he is either returned to duty when well, or, if not likely to be fit to serve again during the manœuvres, the man is sent to Netley. About fifty of such men, all incapable of carrying arms and undergoing the fatigues of the campaign, and whom it was considered impossible successfully to treat in the field, have already been sent to the "reserve" hospital, distant two hours by rail. As soon as the next batch—mostly venereal cases, now getting ready—will have left, the work thrown on the field hospital will be much lighter, and the sick-list probably no longer swelled by a disease the germs of which were brought here.

The 1st Division turned out at 9 o'clock this morning to fight the 2nd from Bottlebush Down. After the battle they are to shake hands, and return here to be encamped together once more. The heat during the last day or two has not been so intense, a northerly breeze blowing all day, and cooling the air. Instead of turning out now in the middle of the night, as before, the men can have their breakfast comfortably before the day's work commences—a very great advantage.

The tents of the 2nd Division are rapidly rising everywhere, for, although the combatants have not returned, a great part of their baggage has. One of the three field hospitals of this latter division had remained behind, containing men who could not be moved; but the marquees of the other are now being put up. Patients who can bear the transport are carried in the ambulances attached to the field hospitals on the march of the division.

It is expected that the corps will remain here until the advance towards Salisbury takes place.

Southern Army, Race Camp, near Blandford,
September 4th, 1872.

I promised in my last letter to tell you something more about our field hospitals as at present established with the Southern Army. With each division are three complete field hospitals, one of which from each division is detached to the two brigades of cavalry, leaving therefore four hospitals of three marquees, with 15 beds each, capable of accommodating 180 patients. They are numbered 1st, 2nd, and 3rd, like the brigades in each division; but no such distinction is made with regard to the hospitals, which admit any man irrespective of the part of the division he may belong to. The field hospitals of the first corps on the Race Camp adjoin each other, facing west-north-west, the ground being marked out by Geneva flags. The twelve marquees are well dressed in line, with an interval between those belonging to the 1st and 2nd Divisions, having two rows of bell tents behind them. The former are double walled, well ventilated, and floored with tarpaulins, each patient bringing his own grey blanket with him on admission, and being then provided with a waterproof sheet and a large thick white hospital blanket, using his pack as a pillow. The six bell-tents allowed by regulation, and pitched in rear of the marquees, are occupied as follows: one by the surgeon in charge, one by his office, the third by two assistant-surgeons, the fourth by stores, the fifth is used as a pharmacy, and the other by the Army Hospital Corps men. The latter are ten in number: a steward and cook, both under the controller; a compounder, ward-master, a corporal, and five orderlies. Behind these tents again are the latrines and cooking-places, a water-cart, five ambulances, and two general service waggons. The latter of course carry the whole equipment of the hospital, the former are at times detached, one to each brigade when on the march, the remainder carrying the sick of the hospital. Every morning also two ambulances are sent round the different regiments to collect the sick, and bring them down for admission, four horses being attached to the hospital when stationary in camp for that purpose, or any emergency that may occur. A pack-horse carries the field-panniers, containing a supply of medicines, I hear, not only insufficient in quantity but also in variety. But then, of course, this is very unlike real warfare. Here the field hospitals are filled with diseases most of which would never appear on service, where the most urgent operations only would be made, the necessary wounds dressed, and little or no medicines used, the patients being as soon as practicable transferred to reserve hospitals, where larger supplies of drugs would be at hand.

Last year, I believe, the field hospitals were entirely officered by staff medical men, but now regimental surgeons and assistant-surgeons have been appointed quite indiscriminately, away not only from their regiments, but even from their brigades and divisions. What the object of this arrangement can be, it is indeed difficult to imagine, for would it not have been far simpler to have put regimental men—if necessary to detach them at all—at all events into the field hospitals in which men of their regiments are treated, instead of, as now, to give them men to tend whom they have never seen before, and to allow their own to be looked after by equal strangers? It would no doubt be advantageous for the patients, who, as everybody knows and nobody can dispute, infinitely prefer to be attended by their own doctor. Then of course you must have brigade field-hospitals like last year; and why not? Detach the senior surgeon of the regiments in the brigade, and give him one assistant-surgeon from each of the other two regiments, then each medical officer could treat his own men, much more satisfactorily to all parties concerned. In the Prussian service, certain medical officers remain almost entirely with regiments—really very similar to our regimental system—while the field and reserve hospitals have staffs of their own.

Our present only reserve hospital is at Netley—perhaps too far away even now, but certainly too distant when this corps commences to move towards Salisbury, and the fighting commences. It will then perhaps be found necessary to establish other stationary hospitals in the rear, for sick men could not be carried about daily, and all day long, in ambulances which, when fighting has once begun, will be hours and hours on the road.

I think the medical officers attached to an ambulance should be all mounted; if not in possession of horses, they should be supplied, as, indeed, I hear was intended at first, but not carried out.

Nearly forty sick were sent on Monday to Netley, mostly diseases incidental to the London season, as a contemporary expressed it, which could not be properly treated in camp. Doubtless the sick list will now be greatly smaller, and already during the last few days admissions for the above disease have become fewer and fewer, and it seems likely that nearly all such cases have now presented themselves. On the other hand, as was only to be expected, diseases peculiar to camp life have become more frequent, especially after the two wet days, Saturday and Sunday, when everybody and everything patiently passed through the different degrees of wet, wetter, wettest, and a most delightful odour of mouldy straw pervaded every tent. I must say, however, that our canvas houses are made of material so perfect in every way, that leaking, so annoying and generally so common in a large camp, is here almost entirely unknown. The cold showers on Saturday, and the icy downpour on Sunday, sent in a few cases of rheumatism, chest affections, and sore-throat. Accidents, such as kicks, sprains, or fractures, have been extremely rare; indeed, none of the latter have occurred during the week.

Taking into consideration the large force here—about 14,000 men—the fifty or sixty patients in the different hospitals show how healthy this camp life is; and what could

be more conducive to robust health than fresh air, not too much rain, plenty of exercise, and rations sufficient in quantity and good in quality. I hear that goitre is very prevalent among the civil population in these parts—attributable to the large proportion of chalky matter in the water.

CHARGE OF ILLEGALLY SIGNING A MEDICAL CERTIFICATE.

BOW-STREET POLICE COURT, TUESDAY, SEPT. 3RD.

ALEXANDER OGILVIE, a man of about seventy, residing at No. 4, Lime-grove, Shepherd's-bush, and practising as a medical man, appeared to a summons granted on the application of the Commissioners in Lunacy, to answer the charge of having signed a medical certificate without the requisite legal qualification.

Mr. Poland, instructed by Messrs. Vandercom, Law, Hardy, and Aston, solicitors to the Commissioners, conducted the prosecution. Mr. Ogilvie conducted his own defence.

Mr. Poland said that he appeared on behalf of the Commissioners in Lunacy to prefer a very serious charge against the defendant, for having signed a medical certificate by which a gentleman of unsound mind, whose name it would be unnecessary to mention, had been confined for several weeks in a lunatic asylum. It was, of course, of the utmost importance that the documents necessary to authorise the admission of a patient should be strictly legal, and by the 16th & 17th of Victoria, cap. 96, sect. 4, it was enacted that a person could only be confined upon an order signed by a relative of the patient, and accompanied by the medical certificates of two duly qualified practitioners, the latter being members of the College of Physicians or Surgeons, or of the Apothecaries' Company, or of some university or institution having the power to grant such licence. By the 25th & 26th Victoria, cap. 111, sect. 47, it was rendered compulsory upon all persons so practising to be duly registered, and the Medical Act of 21st and 22nd Victoria, cap. 90, provided that every person registered should fully describe his qualification, setting forth the English college, Scotch university, &c., from which such qualification is derived, in order that the same might be duly registered and published. It might be added that any person signing a certificate, not being a physician or surgeon within the meaning of the Act, is guilty of a misdemeanour and indictable offence, and it was under this section of the Act (8th and 9th Victoria) that the present proceedings were taken. The learned counsel then briefly stated the facts of the case, as subsequently proved in evidence, remarking that the patient in the present case was received by Dr. Stocker into the Peckham House Asylum upon the order and certificates which would be produced, and which, on being transmitted to the Commissioners in Lunacy for examination, were returned to him as insufficient, the certificate signed by Mr. Ogilvie not having been properly filled up. The defendant then added the words "M.D. St. Andrews, 1828"; and it appeared that there was a Dr. Ogilvie, so described, in the Register for 1859, but that gentleman died, and his name no longer appeared on the recognised list of medical practitioners. It was possible that the present defendant was a son of the deceased, but this circumstance would not qualify him to act without the requisite qualification. Notice had been given to defendant to produce his diplomas, and it would be for him to prove his right to act as a duly qualified surgeon. Happily the patient had derived great benefit from the careful treatment of Dr. Stocker, and was now in a fair way of recovery, but it was no less the duty of the Commissioners to institute this prosecution.

Dr. Alonzo Henry Stocker examined.—I am a physician, and Medical Superintendent of Peckham House Asylum. It is a house licensed for the reception of lunatics under the provisions of the Lunacy Acts. On 20th July last I received the person referred to in the certificate now produced, as a patient. The order is signed by one of the relatives of the patient, in the ordinary form, and two medical certificates were attached, the one signed by Dr. Wm. Stewart, and the other by Alexander Ogilvie. The latter was described as "being a surgeon, and in actual practice as a general practitioner." The name and place of abode were thus entered: "Alexander Ogilvie, R.N., 4, Lime-grove, Shepherd's-bush." I received the patient under this order, and subsequently reported the facts to the Commissioners in Lunacy, sending the usual copies of the order and certificates. I afterwards received back the copies from the commissioners, and my attention was drawn to the description given of the medical men, in consequence of which I communicated with the latter. Mr. Ogilvie's certificate was sent to him to be amended. It was returned by Mr. Ogilvie with the addition "M.D. St. Andrews, 1828." I then sent a copy of the amended certificate to the commissioners. It was returned to me by the secretary of the commissioners on the 5th of August, with a communication which induced me to communicate with the friends of the patient, and to discharge the patient the following day. I had no knowledge of the fact that Mr. Ogilvie was not properly qualified to sign the certificate until I received the secretary's letter. The patient was so much better when discharged that it was not deemed necessary to place him again in confinement. The patient was confined under the order from July 20th till August 6th. I had no conversation with Mr. Ogilvie on the subject, and am not acquainted with his handwriting.

The defendant said he had no questions to put.

Another witness was called to prove that he knew the defendant, Mr. Ogilvie, and believed he practised as a medical man at 4, Lime-grove, Shepherd's-bush. On the 20th July last he saw Mr. Ogilvie sign the certificate produced.

Dr. Hawkins.—I am Registrar to the General Medical Council, and keep the Medical Register required by the Act of 1858, known as the Medical Act. All persons entered upon the Register are required to prove their qualifications to practise as medical men before their names can be registered, and their qualifications are entered. The Register now produced is the one for the present year. The name of Alexander Ogilvie does not appear in the Register, and I am able to say that his name was not registered on the 20th of July last. There was a person of the name of Alexander Ogilvie registered in January, 1859; his qualifications being the licence of the Royal College of Surgeons of Edinburgh, 1811, also M.D. Edinburgh University, 1822, and Deputy Inspector-General of the Royal Artillery, on half-pay. This registry remained on the books till May 16th, 1868, when he died at Shooter's-hill, Plumpstead. I have a certificate of his death, which was sent to the Medical Council. He was described as a Deputy Inspector-General of Royal Artillery, aged seventy-nine. Since that time no one of the same name has been registered.

Louis Francis Chase, 1, Brook-street, Upper Clapton, clerk to Messrs. Vandercom, Law, Hardy, and Aston, solicitors to the Commissioners in Lunacy, proved that on August 31st he served a "notice to produce" on the defendant at 4, Lime-grove. He at the same time noticed that it was a private house, having a red lamp in front, on which was painted "Mr. Alexander Ogilvie, established 1847" on one side, and "Surgery" and "Midwifery" on the other sides of the lamp. The notice to produce referred to had reference to the alleged qualifications of the defendant, and Mr. Poland stated that the defendant had not produced any documents of the nature required.

Mr. Thomas Martin, clerk to the Commissioners in Lunacy, of Whitehall-place, produced copies of the order and certificates relative to the admission of the patient to Peckham Asylum, as amended.

This being the case for the prosecution, Mr. Flowers asked the defendant if he had anything to say to the charge.

The defendant said—There is one point on which I am anxious to speak. I wish to disabuse the mind of the Court of any impression that I acted in this matter from any motive of gain, or malice, or from any feeling whatever except humanity and friendship to a neighbour. At the time I thus foolishly committed myself, the patient was in an extremely violent state, so much so that it was found necessary to have four men to restrain him from self-slaughter, or serious damage to those about him. I declare most positively that but for the urgency of the case I should

not have signed the certificate. I have been in practice with large success for forty-two years. I was fully educated for the profession. My father was a professional man before me. The Act of Parliament for the registration of medical men——

Mr. Flowers, interrupting the defendant, suggested that it would be apart from the question to go into these matters now, as he had no power to deal with the case. It would be better to reserve these remarks for another tribunal.

The defendant said he meant merely to say that it was not compulsory on him, when he commenced practice, to be registered. He would throw himself on the mercy of the Court.

Mr. Poland.—No man is a legal practitioner unless his name appears on this Register.

Mr. Flowers.—It is my duty to send this case for trial, having no power to deal with it summarily. I do not consider it necessary to ask you to find bail if you have not friends in attendance. I shall be satisfied with your own personal recognisances in £100 to appear at the Central Criminal Court to answer this charge.

The defendant was then committed for trial.

Correspondence.

"Audi alteram partem."

MR. PEMBERTON ON LITHOTOMY.

To the Editor of THE LANCET.

SIR,—Whether Mr. Teevan's remarks on median lithotomy are recorded at p. 237, vol. ii. of THE LANCET for 1870, or at p. 891, is a matter of little moment, so long as I have quoted the language correctly, as given in the abstract of the paper (which alone I read), and this is not disputed. I can only explain the fact of my missing the full paper, to which I should certainly have referred, by the circumstance that it was published in THE LANCET twelve months after the abstract had appeared—namely, December 23rd, 1871, p. 882. I have now read it, and I am obliged to Mr. Teevan for calling my attention to it. It will repay perusal at the hands of all practical surgeons, and I will at once say that I should not have used the term "reckless" to characterise the conclusions at which Mr. Teevan had arrived had I had the advantage of perusing it previously to reading my address. I would, however, have termed the conclusions "eminently dogmatic," and as being "deductions," to use Mr. Teevan's own terms, "drawn from experiments on the dead body." I yet believe that the neck of the living bladder in children and young adults admits of most free dilatation without any approach to laceration, and in this I must, for the present at any rate, differ from Mr. Teevan.

I am, Sir, yours, &c.,

Birmingham, Sept. 4th, 1872. OLIVER PEMBERTON.

WATKINS VERSUS MEERES.

To the Editor of THE LANCET.

SIR,—The recent trials for malpraxis are deeply interesting to all medical men, and the Watkins-Meeres case is especially so. Writing to Dr. Meeres to express my sympathy, I learnt in reply that his costs would be about £150. I am sure that many medical men will wish to help Dr. Meeres, and I shall be very glad to receive subscriptions on his behalf. Dr. Meeres is unknown personally to me.

In the Paris correspondence of THE LANCET, about three weeks ago, was a case similar to Dr. Meeres's, in which the plaster-of-Paris bandage was applied as the only apparatus which would keep the bones in place.

Cases of fracture of the neck of the femur have occurred in my practice, in which the shortening has not been at first apparent, but has been found some days later; and it seems likely that the case which has brought Mr. Buckley into trouble was of this kind.

I am, Sir, yours very truly,

CAREY P. COOMBS, M.D. Lond.

Castle Cary, 30th August, 1872.

THE ARMY MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—Do not you think the medical officers serving at Malta should receive almost as much consideration as those on the West Coast of Africa? Only five of them have been invalided this summer—Paynter, inspector-general; Bernard, surgeon-major R.M.F.A.; Williams, 28th Regiment; and Hoysted and Colahan, 52nd L.I.! A year's leave for every year's service should at least be given! Fever is very prevalent among all classes, and the executive officers who are obliged to do duty during the summer have no immunity. A large number have been invalided, and two of the 18th have died.

I am, Sir, yours, &c.,

August, 1872. A SUBALTERN DOCTOR.

Obituary.

M. LOUIS.

NOT France alone, but Europe, America, and the colonies, have sustained a severe loss in the death of this great physician, who, advanced in life as he was, yet contributed by his genius and the inspiration of his presence, to the furtherance of that medical knowledge of which he was so successful a pioneer. His writings, precious as they are, and monumental for their author, exercised an influence on his contemporaries even smaller than that of his clinical prælections. Year by year fresh bands of students came to imbibe from his lips the instruction which their grateful predecessors had abandoned with reluctance, till his academic progeny knew no distinction of race, rank, or even colour, but coalesced into a noble army of enthusiasts in the cause of medicine, of science, and of humanity.

Pierre Charles Alexander Louis was born at Aï, in the department of the Marne, in 1787. From early youth he manifested a strong determination to medical observation and research, while invigorating and refining his faculties by all the resources, classical, artistic, and social, at his command. Proceeding to Paris, he threw himself with ardour into the studies most congenial to him, and graduated with distinction as Doctor of Medicine in 1813. A short time thereafter he travelled through Russia, availing himself of every opportunity to extend and deepen his knowledge. On his return he settled in practice, and soon acquired a *clientèle* equally numerous and distinguished. In spite of the incessant calls upon his time, he entered *sans titre et sans fonctions* the hospital of the Charité, where for several years he made minute and comprehensive studies in diagnosis and pathology. In more than conformity with the Horatian doctrine to let nine years elapse before publication, he began independent authorship comparatively late in life. His first treatise was his "Recherches Anatomico-Pathologiques sur la Phthisie," which appeared in 1825 in one volume octavo. This was succeeded next year by his "Mémoires sur la Muqueuse Membrane de l'Estomac, sur la Croupe, et sur l'Abcès du Foie," also in octavo. A second edition of this valuable work was called for in 1843. The reputation won for M. Louis by these books also secured him the honour of being chosen a member of the Academy of Medicine. By this time the esteem in which he stood among his contemporaries was established. No better auxiliary had reinforced the ranks of that school in which Bayle and Laennec were masters. Engagements official as well as private poured in upon him with a celerity to which he vainly endeavoured to respond. Among the former, however, he found time to co-operate with his friends MM. Chervin and Trousseau in the commission of inquiry appointed to investigate the genesis, course, and pathological issue of yellow fever at Gibraltar. His share in this enterprise was embodied in two octavo volumes of "Documens," published in 1832. In these he was claimed as one of themselves by the partisans of the contagious view of that malady. The year before (1831) he had applied, but without success, for the chair of Clinique Interne

de la Faculté. His position, however, as physician to the hospitals of the Pitié and the Hôtel Dieu more than compensated for this disappointment. From 1834, when he entered on its duties, to his retirement, twenty years afterwards, he drew around him an ever-widening circle of pupils, and laid the first stone of many a subsequent reputation—French, Italian, German, English, and American. His skill in diagnosis was attested so often and so signally by pathological disclosure as to elevate the physician's art into something like the certainty of an exact science. Seldom, indeed, has post-mortem verification waited so faithfully on diagnostic surmise!

His withdrawal from his connexion with the Pitié and the Hôtel Dieu had been preceded by much recognition of his services. Among other tributes he received that of officer of the Legion of Honour on the 20th of December, 1842. His publications also included others than those we have already noted. He wrote an excellent treatise on Typhoid Fever, which appeared in 1828, in two volumes octavo, and was expanded and republished in 1841. In this work he instituted a skilful comparison between typhoid and other acute maladies. An "Examen" of Broussais' Examen appeared in 1834, in which he exposed the fallacy of that physician's treatment of pulmonary phthisis and typhoid fever as simple phlegmasiæ. His views on the effects of bleeding in inflammatory affections, first published in 1835, exercised a powerful influence on the subsequent practice in this country; it being no exaggeration to say that the revulsion against venesection in pneumonia and pleurisy, led by Hughes Bennett, had its origin in the precept and practice of Louis twenty years before.

As a member of the Academy of Medicine he had no superior in distinction, and in consequence he was elected to the post of Perpetual President of that body. In latter years his health caused him to slacken the zeal of his scientific pursuits; but he never abated his interest in the progress of medicine. Gratifying proofs of the affection of old pupils showered in upon him "thick as leaves in Vallombrosa." Dedications of works like that of Dr. Hughes Bennett on Pneumonia were amongst the most conspicuous of these. Full of years and honours he sank imperceptibly, by a "calm decay," to that tomb from which his skill had rescued many a fellow-mortal; and the earth closed over him in presence of the most distinguished of his countrymen and contemporaries, and amid the pious regrets of pupils and friends in every quarter of the globe.

ROBERT BERNARD, M.D., R.N.,

DEPUTY INSPECTOR-GENERAL OF HOSPITALS.

WE regret to announce the death of Deputy-Inspector Bernard, R.N., on the 25th August, at Spa, where he had gone for the recovery of his health. Dr. Bernard entered the Naval Medical Service in 1838, was promoted to the rank of surgeon in 1845, and became a deputy inspector in 1865. Having served in all parts of the world, Dr. Bernard proceeded to Hong Kong in 1865, and while in charge of the hospital there was seized with dysentery, which laid the foundation of his fatal illness, and necessitated his proceeding to Japan for the preservation of his life. Although enabled to resume duty at Hong Kong, Dr. Bernard continued to suffer from chronic dysentery until invalided to England in 1868. At the end of that year he was selected to take charge of the surgical wards in the Royal Naval Hospital at Plymouth, and prior to entering upon these responsible duties he took the greatest pains to fit himself for their performance by seeing the practice of the London hospitals and by practising the operations of surgery on the dead subject. These efforts bore good fruit at Plymouth, where Dr. Bernard performed many capital operations with great success, among others ligature of the external iliac and carotid arteries, reports of which have appeared in these columns. Dr. Bernard's zeal attracted the notice of his superiors, and he was rewarded by being made honorary surgeon to the Queen, and would doubtless have been promoted to the rank of inspector-general in due course had he lived. Unfortunately in October, 1871, Dr. Bernard imbibed some morbid poison through a recent and tender cicatrix on the forefinger while making a post-mortem examination on a patient who had died of malignant dysentery. Acute inflammation of the finger and arm was the result, with a return of the dysenteric symptoms in an aggravated form, accompanied by great debility and emaciation. Notwithstanding, he continued to do duty until the present summer, when he was obliged to go on leave, and, by the advice of Dr. Sieveking, proceeded to Spa, where he died.

Dr. Bernard has undoubtedly fallen a victim to the exposure incident to a naval life. The dysentery originally developed at Hong Kong was only dormant, and when his system became affected again by the same poison at Plymouth, the old symptoms returned with increased severity. Under these circumstances we trust that Dr. Bernard's widow and children will receive the best consideration of the naval authorities, for he most certainly "died from the effects of injury or disease caused by extraordinary exposure or exertion on service," and they would, we conceive, therefore be entitled to the special rates of pension provided by the Admiralty regulations.

JOHN MACKESY, M.D.

WATERFORD has lost not only a skilful and accomplished practitioner, but a genial and public-spirited magistrate in Dr. John Mackesy, who died on the 25th ult. at Buxton, whither he had repaired in quest of health. The deceased gentleman studied at Glasgow University, where he graduated in 1836 as Master of Surgery and Doctor of Medicine. Part of his professional curriculum was also spent at Dublin, where in the same year he took the licentiateship in midwifery, and in 1837 that of the Apothecaries' Company. Settling in practice in Waterford, his medical skill, his pleasant manners, and his constant devotion to duty won for him a large circle of patients; while his interest in public and municipal affairs soon elevated him to office. He filled many posts, and all with credit. A member of the Irish and British Medical Associations, he also became justice of the peace for Waterford, physician to the port, physician to the Tramore, Waterford, and Limerick Railway Company and to the Irish Railway Friendly Society, apothecary to the Waterford Lunatic Asylum, the Leper Hospital, Bluecoat School, and Lying-in Hospital, medical referee to more than six assurance societies, and medical officer to the City Police and the late Corporation for Merchant Seamen. As a magistrate he was extremely popular, and, in his capacity of Mayor, Waterford never enjoyed greater municipal prosperity and tranquillity. After the expiry of his Mayoralty he continued as alderman the same valuable services to the town which he had rendered in the higher office. His death, which was sudden, plunged Waterford into mourning. The Corporation Hall from its tower and the ships in the harbour hoisted flags half-mast high, and the offices and warehouses on the quay, as well as throughout the town, suspended business, and put on the outward insignia of sorrow. Dr. Mackesy leaves a widow (sister of Mr. Justice Lawson) and a son, who holds high rank in the Indian army, along with a large number of distinguished family connexions, and a wide circle of municipal colleagues and private friends, to deplore his loss.

DR. VIGLA.

IT is with great regret that we record the death of Dr. Vigla, a most distinguished physician of Paris, a member of the Academy of Medicine, and physician to the Hôtel Dieu. He was highly esteemed in Paris for his valuable labours and sterling abilities, and was universally liked and appreciated for his excellent qualities of heart. He had been formerly Chef de Clinique to Rostan, from whom he had imbibed his great precision of method. Rayer had been another of his masters, and had furnished him with various views and suggestions which led eventually to the publication of Vigla's first production—a treatise on Glanders. This was successively followed by various writings on Rupture of the Spleen, Microscopical Examination of the Urine, Accidental Communication of the Œsophagus with the Lungs and Bronchi, Hydatids of the Thoracic Cavity, the Cerebral Phenomena which complicate Acute Articular Rheumatism, &c. All these researches bear the stamp of

careful observation and sound judgment, but they are only small monographs or essays. Dr. Vigla was soon so absorbed by an extensive *clientèle* that he had hardly time for the getting up of large books. It may be said that he fairly broke down under the pressure of work. He rarely took a holiday, and was too entirely devoted to his patients and forgetful of himself. In June, 1870, he was suddenly seized by an attack of acute endocarditis, attended by congestion of both lungs. Since then he lingered on, suffering patiently, and a few days ago he died, in the fifty-ninth year of his age.

THOMAS LITCHFIELD, M.R.C.S.

AT Augusta House, Twickenham, on the 29th ult., this amiable and accomplished practitioner died in his seventy-seventh year. His long life was also a laborious and honourable one. Having studied at Edinburgh and Middlesex Hospital, he took the diploma of the Royal College of Surgeons of England in 1817. Settling in practice at Twickenham, he became surgeon to the Carpenters Company's Asylum, district medical officer and public vaccinator to the Brentford Union, medical referee to several insurance companies, and late surgeon to the Government Training College at Whitton. He was a frequent and effective contributor to THE LANCET from its earliest date; and, besides his papers in its columns, was the author of "Advice to the Young Mother on the Management of Herself and her Infant." In general literature he was known and admired for his "Tales of Four Nations"; "Warkworth Castle"; and "The Coldstreams and the Musqueteers." No man was more widely or highly respected in the community than Mr. Litchfield. His professional skill, his indefatigable energy, his wise counsel, and his simple piety, commanded at once the respect and the affection of all with whom his name had become familiar. The profession has lost one of its most honoured members, and we ourselves one of our earliest friends, in this good old surgeon, "in practice before 1815."

Medical News.

APOTHECARIES' HALL. — The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on Aug. 29th:—

Blake, John Ffrench, Galway, Ireland.
Eagar, Robert Taylor Sumner, Sheffield.
Paterson, Robert Haldane, Brigg, Lincolnshire.
Waghorn, Albert Richard, Anerley.

On the same day the following gentlemen passed their First Professional Examination:—

Thomas Highton, St. Thomas's Hospital; Edmund Knowles, St. Mary's Hospital; William Squire, St. Bartholomew's Hospital; Otho Robert Travers, Guy's Hospital.

THE steamship "Deborah," from St. Petersburg for London, is, according to last advices, detained in quarantine at Texel, the captain having died on the passage, presumably from cholera.

THE Physician-General of the Swiss Federal Army has been required by the military authorities to supply returns of cases of damage to the eyes and surrounding parts of the face caused by the discharge of breech-loaders.

THE Surgico-Medical Academy of St. Petersburg has formed special courses of instruction for female students. It is expected that, if the sums devoted to the establishment prove sufficient, the Russian ladies will no longer seek abroad an instruction provided for them at home.

CHINCHONA IN INDIA.—The reports of the progress in India of the cultivation of chinchona continue to be of the most satisfactory description. A knowledge of the species best suited to the different localities of the peninsula is, according to the *Planter's Price Current*, being rapidly perfected, so much so as to warrant the hope that in the course of a few years an abundant supply of the invaluable bark will be obtained throughout the whole country.

Medical Appointments.

COOKE, L. B., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the newly formed Clovelly District of the Bideford Union, Devon.

COX, E., M.R.C.S.E., has been appointed Medical Officer for District No. 5 of the Barnstaple Union, vice C. Johnston, M.R.C.S.E., deceased.

DURHAM, A. E., F.R.C.S.E., Assistant-Surgeon to Guy's Hospital, has been appointed Surgeon to that institution, vice Alfred Poland, F.R.C.S.E., deceased.

DYER, S. S., M.D., has been appointed Medical Officer to the Ringwood Branch of the Hampshire Friendly Society.

ERSKINE, W., M.D., L.F.P. & S. Glas., has been appointed Medical Officer and Public Vaccinator for Culross, Perthshire, vice J. Scott, F.R.C.S.Ed., deceased.

HACKNEY, A. H., M.R.C.S.E., has been appointed Medical Officer for the newly arranged Warbleton District of the Hailsham Union, Sussex.

HAWARD, F. E., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the newly formed Leagrave District of the Luton Union, Bedfordshire.

HUGHES, A. C., F.R.C.S.I., has been appointed a Surgeon to the Stanley Hospital, Liverpool.

KEIGHTHORNE, J., L.R.C.P.L., F.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Callington or No. 7 District of the Liskeard Union, Cornwall, vice A. Macintosh, M.D., L.F.P. & S. Glas., resigned.

LITTLE, W., M.D., L.R.C.P.Ed., M.R.C.S.E., has been appointed Surgeon-Accoucheur to the Toxteth-park Lying-in Charity, Liverpool, vice B. Barrett, M.D., M.R.C.S.E., deceased.

LLOYD, S., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Leigh or No. 4 District of the Martley Union, Worcestershire, vice F. A. Cramer, L.R.C.P.Ed., M.R.C.S.E., deceased.

LOWSON, D. F., M.B., C.M., has been appointed Resident Medical Officer to the General Hospital and Dispensary for Sick Children, Manchester, vice S. F. Murphy, M.R.C.S.E., resigned from ill-health.

MAYOU, G., M.D., M.R.C.S.E., has been reappointed Medical Officer and Public Vaccinator for the Trelleck District of the Monmouth Union, at an increased salary.

PARKER, E., M.B., B.Sc., M.R.C.S.E., has been appointed a Physician to the Stanley Hospital, Liverpool.

RICHARDS, W. A., M.D., L.R.C.P.L., M.R.C.S.E., has been appointed Assistant-Physician to the County Hospital, Winchester, vice F. Wm. Richards, M.B., L.R.C.P.L., deceased.

ROUSE, E., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the newly arranged Hartland District of the Bideford Union.

SHARPE, A., M.D., has been appointed Assistant Visiting Surgeon for Woolwich, under the provisions of the Contagious Diseases Acts (Women), vice J. B. Ryley, L.R.C.P.Ed., resigned.

TUDOR, J. M'D., M.R.C.S.E., has been appointed Resident Medical Officer to the Westminster General Dispensary, Gerrard-street, Soho, vice F. S. Tuck, M.R.C.S.E., resigned.

WILSON, F., M.D., has been appointed Medical Officer to the Freemantle Branch of the Hampshire Friendly Society.

Births, Marriages, and Deaths.

BIRTHS.

BARWELL.—On the 1st inst., at George-street, Hanover-square, the wife of Richard Barwell, F.R.C.S.E., of a daughter.

BENTLEY.—On the 29th ult., at Shannon View, O'Brien's-bridge, Co. Clare, the wife of H. Bentley, L.R.C.S.I., of a daughter.

COATHUPE.—On the 30th ult., at Manchester, the wife of Edwin Wise Coathupe, M.R.C.S.E., of a daughter.

FREEMAN.—On the 3rd inst., at Marine-terrace, Southsea, the wife of Alfred John Freeman, M.D. (of San Remo), of a daughter.

INCE.—On the 29th of July, at Rawulpindi, Punjab, the wife of Dr. John Ince, Civil Surgeon, of a daughter.

MACLAGAN.—On the 29th ult., at Nethergate, Dundee, the wife of T. J. Maclagan, M.D., of a daughter.

MILLER.—On the 27th ult., at North Camp, Aldershot, the wife of Staff Surgeon C. M. M. Miller, of a daughter.

ROBERTSON.—On the 24th ult., the wife of D. W. Roberison, Surgeon, of Pickering, Yorks, of a daughter.

MARRIAGES.

M'DONALD—POGSON.—On the 2nd of July, at St. John's Church, River Onse, Tasmania, Wallis M'Donald, M.R.C.S.E., L.R.C.P.Ed., only son of T. W. M'Donald, Esq., Inspector-General of Hospitals and Fleets, of Teignmouth, Devon, to Jane Anna Louisa, second daughter of the late Geo. Thos. Pogson, Esq., of Rotherwood, Tasmania.

MORRIS—WATSON.—On the 20th inst., at the Parish Church of Stand, Manchester, Joseph Morris, Esq., Surgeon, of Leamington, to Gertrude Hannah, youngest daughter of the Rev. J. W. Watson, M.A., Vicar of Christ Church, Folkestone.

DEATHS.

EDMUNDS.—On the 9th of June, at Cape Town, Wm. Edmunds, M.R.C.S.E., of Robben Island, Cape of Good Hope.

HOWELL.—On the 24th ult., T. L. Howell, M.R.C.S.E., of Llanelly, Carmarthenshire.

KEMP.—On the 2nd inst., of typhoid fever, Emma, wife of B. Kemp, Surgeon, of Horbury, Wakefield.

ROSCOW.—On the 20th ult., at Ivy Cottage, near Rochdale, and late of Brussels, Thos. Tattersall Roscow, M.D., B.A., M.B., L.M., M.R.C.P.L., aged 59.

SLAYTOR.—On 26th ult., C. P. Slaytor, M.R.C.S.E., of Stockland, Devon, aged 51.

WALKER.—On the 1st inst., Alex. Macnamee Walker, M.D., F.R.C.P.Ed., of Tunbridge Wells, aged 59.

Notes, Short Comments, and Answers to Correspondents.

THE STUDENTS' NUMBER OF THE LANCET will be published on Saturday next, Sept. 14th. Those gentlemen holding official situations connected with Medical Institutions in the United Kingdom, who have not yet forwarded the necessary information to our Office for publication in that Number, are earnestly requested to send it *without the delay of a single post.*

INFANT MORTALITY IN ST. GILES'S.

DR. ROSS's Report on the Sanitary Condition of St. Giles's District during the year 1871 contains some interesting observations on infant mortality and its causes in that locality. Nearly 21 per cent. of the children born in the year died before completing their first twelvemonth of life; for the whole of London the corresponding percentage was 17; in Bristol, 16·5; in Nottingham, 18·7; and in Portsmouth, 14·4; while in Liverpool it was 26·9, and in Leicester 24·1. Dr. Ross, in referring to the causes of this mortality in St. Giles's, dwells chiefly upon the evils of artificial feeding, and gives the results of his investigations into the quality of the food that infants get in substitution for the natural sustenance which the mother's breast should afford. Seventeen samples of milk submitted to examination disclosed in many cases an amount of dilution which robbed them of a large proportion of their nourishing power. And the unfortunate part of this business is that the mother or nurse, being ignorant of the reduced strength of the milk as supplied to her, would perhaps further reduce it, by medical advice or otherwise, and so the poor infant would gradually die from starvation. The composition of various kinds of farinaceous foods sold for children is also reported on by Dr. Ross, who points out that, as farina or starch is their chief ingredient, they should all be mixed with milk when given to young children. But supposing the milk to be reduced, as in some cases, to one-third of its proper strength, where are the "nitrogenous elements as well as the potash salts," necessary in combination with the farina, to come from? What with ignorance and unwholesome surroundings of all sorts to contend with, infant life has a terrible struggle to wage for existence in our towns and cities.

ADMINISTRATION OF FOOD THROUGH THE NOSTRIL.

To the Editor of THE LANCET.

SIR,—Your article last week on the subject of Flynn's suicide by starvation induces me to ask you to give insertion to the few following lines.

In January, 1871, a strong middle-aged woman, who had been for some years in a lunatic asylum, but had been discharged, again became insane. Among her delusions and insane acts she determined on starving herself, and I was applied to. I endeavoured by arguments to induce her to take food, but to no effect. I assured her I would give it by force, but she still refused it. Having waited as long as I thought right, I had a pint of good beef-tea made. She was laid on her back on a bed, her head held securely, and I, resting my hand firmly on her cheek to guard against any sudden movement of the head, inserted the nozzle of a small funnel into one nostril, and poured with the greatest facility by tablespoonfuls the pint of beef-tea into her pharynx. Of course involuntary deglutition occurred with each spoonful, and the perfect ease with which the food was given, and the absolute impossibility of preventing deglutition, not only surprised, but much amused the bystanders. This was repeated thrice daily till she was sent into the asylum.

Now, Sir, do not let me appear to take any credit for any new discovery. It would, doubtless, have answered the same purpose to have introduced the nozzle of a gutta-percha funnel or other like instrument into the mouth sufficiently far to pass over the back of the tongue, or to adopt any other means of passing the food beyond the physiological limit of voluntary deglutition, but it would have been less convenient. The plan I adopted was suggested to me by an article in vol. xlix. of the "Half-yearly Abstract," by Dr. Moxey. What occasion can there be under ordinary circumstances for a stomach-pump to introduce food into the stomach? Once the food introduced into the pharynx—pharynx and spinal cord being healthy,—the œsophagus is afar better tube than the tube of a stomach-pump, and no injury is done.

Of course there may have been peculiar circumstances in the case which have not been explained; but I think it would be satisfactory to have them explained.

Your obedient servant,

Corfe Castle, September, 1872. W. E. HUMBLE, M.D. Lond.

Mr. George Pollard.—THE LANCET has always refrained from recommending students' societies of the sectarian class. The student or his parents and guardians must exercise the necessary discretion in choosing his society.

MOUNTAIN AIR.

To the Editor of THE LANCET.

SIR,—Will you or any of your readers kindly give me information concerning the higher table-lands of this country, or other available mountain districts, suitable for a middle-aged lady patient of delicate constitution, suffering at the present time from enlarged lymphatic glands of the neck? I am anxious that she should have the benefit during the next two or three months of a dry bracing air in an elevated position as the best means of staying the progress of the disease and restoring the strength. The glands have not as yet become tuberculous.

Yours truly,

September 2nd, 1872. QUESTOR.

THE MEDICAL REFEREES OF THE RAILWAY PASSENGERS' ASSURANCE OFFICE.

THE following correspondence should be published. It is not the first time Mr. M'Enery has acted in the way complained of, which is contrary to all good taste, and is condemned by the Secretary of the Office for which he acts. Medical men will never submit without protest and indignation to have their patients visited without intimation and consent. If Mr. M'Enery did not know who was in attendance, he should have made it his business to ascertain.—ED. L.

Cerne Abbas, August 7th, 1872.

W. J. VIAN, Esq.

DEAR SIR,—Again I have to complain of Mr. M'Enery, your referee for this district. Without giving me any intimation, he has again called to see my patient, Mr. ——. As he has never noticed my former communications, or given any explanation of his conduct in the pages of THE LANCET, I have not troubled to write to him; but I feel it my duty to enter my protest against his unprofessional behaviour, and I must say that, believing your former communications to me on the subject to be in good faith, I can scarcely understand how the Company can consistently retain as one of their referees a practitioner who steadily persists in such ungentlemanly behaviour, after having had his fault pointed out by yourself and (so forcibly) by the Editor of THE LANCET. Believe me, my dear Sir, any such conduct on the part of your referees does the Company more harm than good, and only tends to excite a spirit of antagonism, which ought not to exist.

Practitioners will not recommend their patients to insure in an Office which allows its referees to act so directly contrary to the spirit of the etiquette of the profession. Personally I care little for the case in question at present, as Mr. M'Enery can do me no harm; but I look upon it as a matter reaching far beyond the limits of personal consideration. It is as a member of a noble profession, and in the interests of that profession, that I trouble myself to notice the matter further; but in this view of the case I certainly shall bring the facts before the Editor of THE LANCET, and should you favour me with a reply, I shall make use of it in the same way.

Having stated my views so fully in former letters, I will not further trespass on your time, but beg to remain, Sir,

Yours faithfully,

JOHN EWENS.

P.S.—Who visits and reports on Mr. M'Enery's patients in this neighbourhood who are insured in your Office? Why am I not as worthy of confidence as he is?

Railway Passengers' Assurance Office, 64, Cornhill, London, E.C., 16th August, 1872.

DEAR SIR,—Your favour of 7th inst. has been handed to me on my return to town; and in reply I beg to state that when my clerks referred Mr. ——'s case to Mr. M'Enery they did not know who the assured's medical attendant was, or the fact would have been stated on the report form.

If our referee *knew* you were in attendance, I regret he should have acted contrary to professional etiquette; but I think your complaint on this point should be addressed to him, and not to,

Yours truly,

W. J. VIAN, Secretary.

John Ewens, Esq., Cerne Abbas, Dorset.

J. P. M. will find the nearest approach to what he wants in the Annual Reports of the Medical Officer of the Privy Council. He will be the better, also, for perusing Prof. Corfield's work on the Utilisation of Sewage, and Prof. Parkes's on Public Hygiene.

MILITIA SURGEONS.

To the Editor of THE LANCET.

SIR,—As the time has now come when militia field officers of sixty years of age will be invited to avail themselves of the privilege of retiring from the service by resignation rather than be removed by the new rule, it is worth while for the surgeons to consider whether it is not more prudent to endure the latter than to resign, as no doubt a voluntary resignation will most certainly be made a pretext for excluding them from the right to claim that compensation to which they are in all equity entitled for the long service and the sacrifice of practice which so many of them have made, and certainly the country cannot refuse to render justice when their claim is fairly brought before Parliament. It has given compensation largely and fairly to the proctors, and the non-purchase officers of the line receive the regulation prices of their commissions; the militia quartermasters retire on pensions; the militia staff sergeants after ten years' service go out on gratuity; and why not therefore, in all fairness, consider the just claim of the surgeons who are now to be summarily dismissed because of age, no matter what their capabilities may be?

Trusting you will aid these hardly used officers in obtaining some compensation after their long and able services to the State,

I remain, Sir, yours faithfully,

August 26th, 1872. JUSTICE.

W. F. S., (Croydon.)—Handbills of the kind sent us by our correspondent are unprofessional; still more, the manner of distribution. The only check to such practices, however, is the good taste and discernment of the *clientèle* to which they are addressed.

QUESTION OF PRECEDENCE BETWEEN M.D.s.

To the Editor of THE LANCET.

SIR,—Under the above heading I observe you state, in your issue of the 24th inst., that "there is no right of precedence among doctors of medicine."

Excuse my pointing out that I believe this to be an error, and that the rule laid down in works treating on the subject of precedence is as follows: Persons of the same academical rank, and of the same University, take precedence amongst each other according to the dates of their degrees. Those of the same rank who have graduated at different Universities take rank according to the dates of foundation of the Universities to which they belong. The order of precedence of the Universities of the United Kingdom is as follows:—Oxford, Cambridge, St. Andrews, Glasgow, Aberdeen, Edinburgh, Dublin, London, Durham, Queen's University in Ireland.

I am, Sir, your obedient servant,

August 31st, 1872. M.D. EDIN.

LEYDEN UNIVERSITY.

On all the European seats of learning, Leyden holds the highest historic rank as a training-ground for British physicians and surgeons. There it was that the majority of our lights in medicine of the 17th and 18th centuries acquired their knowledge; thence they brought home the doctrine and the experience that enabled them to improve the medical schools of England and Scotland, and ultimately render the mother country independent of foreign aid. Scotland in particular owes much to Leyden. The Monros, Whytt, the Gregorys, and many other distinguished teachers and practitioners completed their studies there, and gave their *alma matres* at home the benefit of the culture thence derived. The Dutch themselves are justly proud of their British pupils. Martinus Nyhoff, of the Hague, the greatest antiquarian bookseller in Holland, announces that on the 300th anniversary of the University of Leyden, the 8th of February, 1875, he will publish an album of all the students who have ever been there. A Commission of the Dutch Literary and Historical Society at Leyden undertakes the correction of names, &c. A prospectus of the volume will be issued to subscribers in 1874.

Neophyte (Stockport) had better consult the admirable treatise of Dr. Angus Smith on Air and Rain; the text-book of Wanklyn and Chapman on Water Analysis; and such manuals as those of Thudichum on Wine, and Liebig on Food. If he reads German, he will have no difficulty in procuring accurate and exhaustive treatises on all these subjects.

M. G. E. (Narberth) is thanked for his confirmatory evidence; but the subject had better remain where it stood last week.

"SERIOUS CHARGE AGAINST A MEDICAL MAN": THE CASE OF MR. CROFT, OF SNITTERFIELD.

To the Editor of THE LANCET.

SIR,—The fact that my friend Mr. Croft is suffering from serious disease of the heart, and that the worry and anxiety of his misfortune are proving almost too much for him, must be my apology for addressing you on his behalf. He has asked me to take the matter up, and to assist in his defence as far as I can; and as I have obtained from him the fullest information concerning the case, I must ask you for space to say why I think it of real importance to the profession, and deserving of a further consideration than is contained in your editorial note of the 24th ult.

The extract you give from the *Liverpool Daily Post* contains only a meagre statement of the case, and in some particulars is scarcely accurate; but what is wanting may be roughly filled in as follows:—The child, Henry Need, was the illegitimate son of a young woman from Birmingham. A few weeks before the child's death she had married a very respectable young man on a very short acquaintance, and she has since left him to resume her life in Birmingham. The deceased was her second child, the first being also dead, and I may say that all this has been known only since the inquest, to be afterwards spoken of. Mr. Croft has known and attended the husband's family for many years. Early on the morning of the 2nd of May, three successive messages were sent to Mr. Croft's house to attend the deceased, Mr. Croft meeting the third messenger on his way, who told him that the child was in a fit, and apparently dying. When Mr. Croft reached the house the child was dead, lying on an aunt's knee, with the face blue, eyes turned up and squinting, tongue protruding and bitten, the thumbs turned into the palms and clenched by the fingers, the hands extremely pronated, and, in fact, there existed all the usual appearances of the more common kind of convulsions in childhood. The mother stated that the child had breakfasted off tea and bread spread with dripping, and, so far as she knew, had partaken of nothing poisonous. As there did not appear to Mr. Croft to be any suspicious circumstances, he granted next day a certificate, of which I enclose a copy, taken from a certified copy now before me:—

[COPY.]

"*Medical Certificate of the Cause of Death.*

"I hereby certify that I attended Henry Need, aged three years last birthday; that I last saw ————; that he died on 2nd May, '72, at Snitterfield; and that the cause of his death was a convulsive fit, from which he never rallied. (Signed)

"THOS. H. W. CROFT, M.R.C.S. & L.A.C.

"Snitterfield, S. on A., 3rd May, 1872."

A day or two after the death, rumours got about, and the neighbours had got so dissatisfied that measures were taken to have an inquest; but in these Mr. Croft took no part—indeed was ignorant of them. He received a coroner's precept to make an examination; and finding indications of gastric inflammation, and no other positive lesion, he secured the stomach and its contents and took them with him to the inquest. Into this part of the story I need not go in detail. Suffice it to say that, after a long discussion, the jury brought in a verdict of "Death from natural causes"; and the coroner refusing to have the stomach and contents chemically examined, they were returned to the relatives. Subsequent events showed that they were not returned to the coffin, but were otherwise disposed of; for on exhumation of the body by order of the Home Secretary, they could not be found. The body was buried on the coroner's certificate, the certificate given by Mr. Croft never having been presented to the registrar; indeed it was offered back to Mr. Croft by the husband when it was found that an inquest had been ordered, but was, most unfortunately, not taken. On the 7th of May, the day after the inquest, Mr. Croft gave the following certificate, on which, conjointly with one from the coroner, thirty shillings were paid by a Burial Club in London:—

[COPY.]

"I certify that I have attended Harry Need, who died suddenly of a convulsive fit, and that he died on the 2nd May, 1872. He appeared to me to be about four years of age.

Primary Disease.	Duration of Disease.
Convulsive fit.	One hour and a half.

(Signed) "THOS. H. W. CROFT.

"Dated the 7th day of May, 1872."

On these two certificates two separate informations were laid, and two committals granted, against Mr. Croft. It requires no great legal acumen to see that the first certificate, not having been "uttered," forms no ground of offence; while it is extremely difficult to see how, when the money was paid partly, if not wholly, on the coroner's certificate, even the second form signed by Mr. Croft should form the basis of a criminal charge. Mr. Croft in no manner could benefit by these certificates, and they were both voluntary and gratuitous. The whole case seems to me so baseless that it will, in all probability, be stopped by either the Judge or the grand jury.

It further seems to me, Sir, that the fact of any of our brethren being arraigned on a criminal indictment arising out of his professional conduct is, indeed, "a matter of absorbing interest to the medical profession." This interest ought to become profound, or at least capable of description by some very strong adjective, when the charge rests on what is, at the most, a matter of mere thoughtlessness. No one has been harmed by these certificates, and throughout the case Mr. Croft never pretended that he saw the child alive; in fact, he stated distinctly to the coroner and before the magistrates that he did not reach the house before the child's death. There is no moral wrong in the wording of the certificates, and I am not aware that there is any legal definition of the verb "to attend" which implies that in such a case as that in question the presence of the practitioner is necessary before death. It seems to me that Mr. Croft "attended" within a reasonable meaning of the word; at any rate he did what most of us would have charged for as "attendance," and he struck out of the printed form the words which seem to have been inserted to secure that the certificate shall be signed by a person who has actually attended.

The facts I have given are those published at the time, and supplied to me by Mr. Croft; and if I have taken up too much of your space, let my apology be that I feel strongly for one of the most respected practitioners in Warwickshire, whose prospects have been much injured by his misfortune. Mr. Croft has been in practice in Snitterfield for twenty-three years, has a family of eight children, and his health seems completely shattered. Surely these are enough to secure what help your powerful journal can afford in such a case.

I am, Sir, yours, &c.,

Birmingham, September, 1872. LAWSON TAIT.

*** We gladly insert Mr. Lawson Tait's letter. And we hope for two things—first, that all our readers will respond to the invitation of Mr. Tait to sympathise with and help Mr. Croft; and secondly, that they will all make a note of the inconvenient results that may accrue from giving a certificate with the kindest intention, and in the best faith, but on the strength of an imperfect right to give a certificate. The full particulars which Mr. Tait gives afford conclusive proof of what we never doubted, that Mr. Croft in giving the certificate gave it in the simple belief that he was doing a right and kind thing, and saving the coroner and friends trouble. We are bound to add that the full particulars also show how necessary it is that such cases should be investigated formally, and not disposed of by an imperfect certificate. Further, we must say that Mr. Croft's second certificate, after the inquest, and after he had himself discovered suspicious appearances in the stomach, was an error, prompted by kindness probably, but not less an error. Having said this much, we are now at liberty to say that Mr. Croft's case is one worthy the sympathy of the profession. He acted in the belief that everybody else was as well meaning as himself. But his action has brought him into much trouble. We shall be exceedingly sorry and surprised if the charges against him are not dismissed summarily. Either judge or jury, on a cursory examination of the facts, will see that Mr. Croft acted in good faith, though informally, and even wrongly. Mr. Croft may rely on the sympathy of the profession, and doubtless, too, on its help. Let him not be too severe on himself. Even if a verdict were given against him, it need not distress him too much. It will not alter the fact that he thought he was doing no harm, and if it leads us all to perceive the significance of a certificate it will do good. Perhaps it may lead Government to appreciate a little more the services of medical men in their gratuitous labour. Mr. Croft's state of health will be another guarantee of the sympathy of the profession.—ED. L.

Mr. Theobald Mathew sends us from on board the steamer *Mirzapore*, Suez, the first portion of a paper, "De Insanitate." This contribution is meant to be in Latin; but we cannot recognise its opening expression, "Mihi valdè opportunè" (it strongly occurs to me), as belonging to that language. Mr. Mathew is thanked for his "zeal." Our only regret is that it is not "according to knowledge."

H. M.—1. General indications as to salary will, in all probability, be given by the Local Government Board to the sanitary authorities, but the absolute fixing of salaries will rest with the latter.—2. It is impossible to indicate a definite sum, but under any circumstances we should say not more than half the remuneration now paid to the parochial medical officer.—3. All health officers should be competent to make an ordinary water analysis.

Mr. Edward Bousfield.—1. We should think not; but this is a legal rather than a medical question.—2. Some general indication will be given from the Local Government Board as to the proper scale of remuneration.—2. A legal question, that can be best answered by our correspondent's town clerk.

K. M. (Stamford-hill) asks, What is the smallest dose of opium known to have proved fatal to a person fifteen years old? We recommend him to consult the archives of toxicology, French and German. We believe there is no translation *in extenso* of Bichât's "Recherches sur la Vie et la Mort." The late Dr. Gregory's edition of Reichenbach will supply our correspondent with the requisite information.

Dr. Stewart's letter is eminently unfit for publication. If he desires it, a temperate defence or explanation of the advertisement shall readily be inserted.

Zackary, (Lisson-grove.)—At the Epileptic, or indeed in any well-appointed general hospital.

STREET ACCIDENTS.

A PARLIAMENTARY Return, based upon the police returns, shows that during the year ended 30th June last, 121 persons were run over and killed in the streets within the Metropolitan and City Police Districts, while 2849 persons were maimed or injured from the same cause. In the year 1870 the deaths were 134, and the persons injured 2184; there were fewer fatal street accidents, but a considerable increase in those non-fatal, last year as compared with the year preceding.

C.—Inquiry shall be instituted, though the results may not be so unfavourable as our correspondent anticipates.

K.—No.

FASTIDIOUS PAUPERS.

To the Editor of THE LANCET.

SIR,—I read with indignation an account in your issue of to-day of the fact that the Lambeth paupers have had preserved Australian meat served to them as proper food. I am one, and my friends are more, of the middle class, who find this article of diet palatable. Indeed, for myself, I must own to a great partiality for it. I happen to know also the table of a Duke where it is served and appreciated. But, Sir, are the tastes and depraved appetites of the upper and middle classes to be a guide for the paupers in Lambeth or any other Union?

Referring also to a report I notice of extra vagrant use of stimulants, &c., because paupers *desire* it, I may quote two examples occurring to me within a few days.

In-door.—A stout young girl is duly indignant at my refusing to order her some beer in addition to unlimited good diet, when she has plainly told me that she "has taken a fancy for some days that she would like some." This I refuse on the insufficient ground that a medical officer is to order according to *necessity*, not *fancy*.

Out-door.—A man has had supplied to him unlimited bread, half a pound of meat daily, one quart of milk daily, and he observes (justly no doubt) that he "thinks it is time he had some nourishment given to take to." I again (brutally I know) refused.

Now, Sir, is it not time that you or other influential partisan of the rights of the poor stirred in this matter?

I would suggest that each pauper, whether in- or out-door, be supplied with an order-book, in which they might daily note their requests or demands. The only possible objection to this is, that the in-door pauper might have the same scruple that a woman (a club patient of mine) had lately. She was supplied generously by kind rich neighbours with all sorts of delicacies from their own tables; but she found it spoilt her appetite to be told she should have a chicken's breast and some blanc-mange or jelly sent her at dinner-time, and requested that things might be sent in without notice to tempt her more readily.

The *out-door* gentry might entertain another scruple of the same woman's: that it was a great trouble to cook the raw meat sent her, and that she would prefer her chop or steak sent in as she required it, cooked and hot. So that you see, Sir, there might be faults even to the "order-book" scheme. But surely, if we commenced by voluntarily paying double poor-rates, some ingenious philanthropist might recommend a plan to suit the paupers.

Yours obediently,

London, August 31st, 1872. W. E. S. S.

Mr. Robert Culling, (West Lydford.)—The first patient mentioned by our correspondent, who was discharged "sane" from an asylum, may, if her friends regard her as still sane, lodge or live where she chooses. The Lunacy Commissioners cannot interfere. They have no authority over the house where she resides, and the landlord or landlady over her is not liable to a penalty. The other patient, who has never been certified as "insane," is exactly in the same position as to social privileges with the first.

Mr. John Evens.—We should be glad to receive the articles if not too long.

FOOD IN THE WRONG PLACE.

To the Editor of THE LANCET.

SIR,—I shall feel obliged by the insertion of the following cases in the columns of your journal.

CASE 1.—On Feb. 10th, 1869, at ten o'clock P.M., I was sent for to J. B——, a farmer, living at South Kirby, and found from the report of his son that during the mastication of a piece of bacon-rind his father began to laugh about something amusing, when suddenly he coughed, and, putting his finger into his mouth, said he was choking, which much alarmed his family. When I arrived, and hearing the account, and seeing from the patient's anxious appearance and frequent characteristic cough how things were, I proceeded to make an examination with the index-finger, but failed to find the offending body; and, as it seemed rather to aggravate the symptoms, I desisted, and had recourse to the use of the sponge-probang, but with no better result. Symptoms becoming more alarming, as the lungs evidently began to show signs of suffering, it then suggested itself to me that a persevering washing with warm water would lubricate, soothe, and relax the parts. This I did with the aid of Coxeter's laryngeal syringe, and after many hours of anxious watching and intermittent washings, the patient gave a sudden strong cough, and the piece of rind flew out. This was after a washing with the syringe. The patient at once expressed a sense of great relief, and all the pneumonic symptoms began to subside from that period up to perfect convalescence.

CASE 2.—H. A——, aged twenty-four years, a butcher, living in Hemsworth, was on the 6th of August, 1872, playing with beans on the floor of his house, when he opened his mouth, intending to throw one down his throat, but perceived it stick fast in "some place," as he stated. He began to cough a little, and breathe with great pain, as also to have some difficulty in deglutition; and the other concomitant symptoms of this accident presenting themselves, the man came to my surgery, and told me what had happened. Whereupon I explored the parts with my finger, as also with the sponge-probang, but it only seemed to irritate and gave no relief; so I had recourse to the warm-water douche, which I applied with Coxeter's laryngeal syringe, and after a dozen washings the patient said, "It is gone, Sir; I feel quite clear." In this case the bean had gone down the larynx, no doubt, and was previously under the epiglottis.

I remain, Sir, yours, &c.,

Hemsworth, Pontefract, Sept. 1872. E. W. DENTON, L.F.P.S.G.

Tendring Hundred.—All local boards now in existence will continue to exist under the new Act. In a large rural district which embraces within its area a local board district the local board will continue to be the sanitary authority in their special district as heretofore, while in the surrounding rural district the guardians will be the sanitary authority. Instructions relative to the appointment &c. of medical officers of health will shortly be issued by the Local Government Board. Our correspondent will observe that we have referred to this subject on another page.

Mr. R. B. Selby.—The amount of the fee rests entirely with the Company, and we would advise our correspondent to communicate with the Secretary.

TREATMENT OF CHOLERA.

To the Editor of THE LANCET.

SIR,—The following case testifies to the efficacy of the calomel treatment of cholera, and may be worth insertion:—

On Monday, Aug. 26th, I was called in to see G. C——, a boy aged seven years, who had been attacked early that morning with all the symptoms of malignant cholera. When first seen he was in a state of total collapse. I ordered two grains of calomel every hour, with milk-and-water and ice *ad libitum*, and turpentine stupes. After eight grains had been administered the body became warm and the pulse perceptible, although purging and vomiting still continued. I then ordered the calomel to be given every two hours, continuing this treatment till the next morning, when the symptoms had much abated. The child, having taken in all thirty-two grains, became convalescent on the fourth day.

I remain, Sir, your obedient servant,

Southampton-row, Sept. 1872. JOHN F. STAINES, L.R.C.P. Edin.

To the Editor of THE LANCET.

SIR,—During the epidemic of 1832, I had as many as thirty-two cases of Asiatic cholera. My treatment was after the system of Dr. Ayre, of Hull—viz., calomel, one grain, every ten minutes. Liquor potassæ, ten drops; tincture of hyoscyamus, five drops; peppermint water, one ounce, with each dose of calomel, carefully watching effects, and modifying the number of doses according to circumstances. The diet was milk, with potass-water. Inguinal inunction was markedly beneficial. I believe that in this fearful disease much may be attributed to a paralysed state of the liver and kidneys, inasmuch as the moment they can be induced to resume their duties, in most cases, the disease rapidly disappears. Yours obediently,

August 31st, 1872. MEDICUS.

COMMUNICATIONS, LETTERS, &c., have been received from—Mr. Pemberton, Birmingham; Mr. Shepherd; Mr. Durham; Dr. Staines; Mr. G. Rogers; Mr. Griffiths; Mr. Dunkely; Mr. Bolton, Doncraile; Dr. Evans, Narberth; Dr. Beamish, North Shields; Mr. Edwards; Mr. Bury; Mr. Townsend; Mr. Harrison; Mr. R. B. Selby, Kirkcowan; Dr. Moxey, Turnham-green; Dr. Maclagan, Dundee; Mr. T. Lyle, Dalston; Mr. Groves; Mr. Rickards, Birmingham; Mr. Roberts; Dr. Warne, Ventnor; Mr. J. Granton, Warminster; Mr. J. Wilmore; Dr. Lownds, Liverpool; Mr. Cecil Curwen; Mr. Michell; Dr. Turnbull, Liverpool; Mr. Malton, Cork; Dr. Huntley, Corfe Castle; Dr. Jack, Headingley; Dr. Pomier, Poitiers; Mr. Perkins; Mr. Arthy, Chepstow; Mr. Folker, Hanley; Mr. Robinson, Ripponden Dr. Coombe, Castle Carey; Mr. Porter; Mr. Cresswell; Mr. Hindmann, Vienna; Mr. W. Trevelyan, Ashford; Mr. B. Anderson, Crick; Mr. Swan; Mr. Moir; Mr. G. O. Spence, Upper Holloway; Mr. Martin; Mr. Goolden; Dr. F. H. Smith, Lewisham; Dr. Mathew, Suez; Dr. Theobald Williams; Mr. Mainwaring, Stoke; Dr. Headley, Warwick, Queensland; Mr. Foster, Wolverhampton; Mr. Cowell; Dr. Le Haye, Rotterdam; Mr. G. Pollard; Dr. Hime, Sheffield; Mr. Johns; Dr. Denton, Pontefract; Mr. Garland, St. Ives; Mr. Lang, Rugby; Mr. O'Leary, Belfast; Mr. Watson, Chorley; Mr. George; Mr. Braden, Lewes; Mr. Bowes, Herne Bay; Mr. Culling, West Lydford; Mr. Rendall, Saltburn; Mr. Bayliss; Mr. B. Harvey, Buckingham; Mr. Jeans, Dunblane; Dr. Walsh, Midleton; Dr. Hornibrook, Kinsale; Mr. Coathupe, Manchester; Dr. Ewens, Cerne Abbas; Dr. Pearse, Wellington; Mr. Darley; Mr. Elkins, Glargow; Mr. Walford, Kettering; Mr. Gordon, Frome; Mr. Hayman; Mr. Relfe; Mr. Garman, Wednesbury; Mr. Kemp, Horbury; Mr. Wrench, Baslow; Mr. Ryan; Mr. Johnstone, Pontypool; Mr. Mayor; Mr. Maule, Bridlington; Mr. Hall, Ipswich; Dr. de Launey, Lyons; Dr. Graham, March; Dr. Stewart, Larkhall; Mr. Alexander, Hammersmith; Mr. Butler; Medicus; Pupil; Zachary; C.; Quæstor; M.D. Edin.; K. M.; W. E. S. S.; Verisopht; Neophyte; Nemo; H. M.; J. M. P.; S. H.; A Scotch Clergyman; K.; M.R.C.S.E.; A Constant Reader; &c. &c.

Daily News, Penrith Observer, Keighley News, Irish Times, Western Gazette, Newcastle Chronicle, Journal of Progressive Medicine, Elgin Courant, Dublin Evening Mail, Huddersfield Chronicle, Railway Service Gazette, Evesham Journal, Anti-Game Law Circular, Philadelphia Medical Times, Tavistock Gazette, Northampton Herald, Lynn News, Bombay Gazette, South London Chronicle, Le Bordeaux Médical, Liverpool Daily Post, and *La Reforma de las Ciencias Médicas* have been received.

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